AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0003	10 June 2004		

6. ISSUED BY CODE

USA ENGINEER DISTRICT, JACKSONVILLE
PRUDENTIAL OFFICE BLDG
701 SAN MARCO BLVD, ATTN: CESAJ-CT
JACKSONVILLE, FL
KATHIE DUKE 904-232-3713 OR 561-626-7324

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CODE FACILITY CODE

(√)	
X	9A. AMENDMENT OF SOLICITATION NO. W912EP-04-R-0006
	9B. DATED *(SEE ITEM 11)* 29 April 2004
	10A. MODIFICATION OF CONTRACTS/ORDER NO.
	10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(√)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK, 8.5 SQUARE MILE AREA (SMA), PUMP STATION 357, CANALS & LEVEES, AND STORMWATER TREATMENT AREA (STA), DADE COUNTY, FLORIDA

ANY ENCLOSURES ACCOMPANYING THIS AMENDMENT SHOULD BE INSERTED INTO THE PLANS AND/OR SPECIFICATIONS AS APPLICABLE. ALL SUPERSEDED MATERIAL SHOULD BE REMOVED OR ADEQUATELY MARKED TO INDICATE THAT THEY HAVE BEEN SUPERSEDED.

BID OPENING DATE REMAINS 23 JUNE 2004 AT 4:00 PM.

SEE ATTACHED SF30 CONTINUATION PAGE.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY *(Signature of Contracting Officer)*	16C. DATE SIGNED

SECTION SF-30 BLOCK 14 CONTINUATION PAGES

SPECIFICATIONS: Specifications for this project have been updated.

a. Asterisks appear before and after the line or lines where revisions have been made to the text on the enclosed revised pages and pertain only to the changes made by this amendment except where the reverse side of a page has been previously amended; however, these can be identified by the amendment number opposite the page number at the bottom of each page.

b. Some specification revisions include additions with underlined text or deletions with line/cross-outs.

c. The text changes may have necessitated reformatting of subsequent text or pages. If this is the case, those pages have also been issued as amended pages but are not marked with asterisks, underlining or line/cross-outs.

The following sections have been replaced by this amendment:

Section 00100A
Section 00100B
Section 01270
Submittal Register
Section 02331
Section 13100

DRAWINGS: The following drawings by D.O. File Number have been revised (see Revision Block) per this amendment.

D.O. File No. 402-38,239:
1. Drawing No. C-112
2. Drawing No. C-113 (Revisions intended for Amendment 0001, and not made).
3. Drawing No. C-114 (Revisions intended for Amendment 0001, and not made).
4. Drawing No. C-115 (Revisions intended for Amendment 0001, and not made).
5. Drawing No. C-116 (Revisions intended for Amendment 0001, and not made).
6. Drawing No. C-117 (Revisions intended for Amendment 0001, and not made).
7. Drawing No. C-118 (Revisions intended for Amendment 0001, and not made).
8. Drawing No. C-119 (Revisions intended for Amendment 0001, and not made).
9. Drawing No. C-120 (Revisions intended for Amendment 0001, and not made).

Descriptive change to Drawing Nos. C-113 through C-120 of D.O. File No. 402-38,239: Add Note “4. The lines indicating rock and the low elevation of finished grade are based on estimations of field conditions. See Note 3 of Drawing No. C-112.”

SECTION 00100A

INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

(TRADE-OFF BETWEEN PAST PERFORMANCE, UTILIATION OF SMALL BUSINESS CONCERNS, AND PRICE)
(AWARD WITHOUT DISCUSSIONS)

PROPOSAL SUBMISSION REQUIREMENTS

INST-1 Notice. The Government intends to make award without holding discussions with offerors. Therefore, offerors are encouraged to include their best terms and conditions in the initial offer. By submitting an offer in response to this solicitation, offerors are agreeing to comply with all terms and conditions contained in the solicitation. Unless the solicitation specifically invites the offeror to submit exceptions, the Contracting Officer may reject any offer that contains exceptions. If, despite the warning given in this paragraph, the offeror elects to include exceptions, the exceptions must be specifically and clearly identified on a separate page. In this solicitation, the words "offer" and "proposal" are used interchangeably. (See definition of "offer" at FAR 2.101.) Except for any portions of the offeror's proposal incorporated into the resulting contract by specific reference, the terms and conditions included in the solicitation, including any amendments, shall take precedence over the offeror's proposal.

INST-2 The Proposal. Each offeror shall submit a written proposal consisting of the following documents:

INST-2.1 Completed Standard Form 1442 with price schedule.

INST-2.2 Offer guarantee (or bid bond) if this solicitation includes the clause at FAR 52.228-1, Bid Guarantee.

INST-2.3 Completed representations & certifications (Section 00600 of this solicitation)

INST-2.4 Past performance information.

INST-2.4.1 Submit information for all relevant contracts and subcontracts started or completed within the past 3 years (measured from the date of this solicitation). Submit a separate Past Performance Information Collection Sheet for each project. (A copy of the sheet is attached to the solicitation.) Include past performance information regarding predecessor companies, key personnel who have relevant experience, and subcontractors that will perform major or critical aspects of the work. Provide a letter of commitment from any major or critical subcontractor. (For proposed subcontractors, clearly identify the work each will perform.) For each project submitted, explain why it is relevant to this project, and provide information on problems encountered and the actions taken to correct such problems. (Relevancy is defined in the DOD guide to collection and use of past performance as "information that has a logical connection with the matter under consideration and applicable time span.")

INST-2-4.2 Relevant past performance on this project would be considered as the following: (1) Management and coordination of a large, multi-faceted project, which included the use of major/critical subcontractors, and (2) Installation of a PLC based control and telemetry system. Provide information on technical data utilized; the extent of programming required for PLCs and SCADA software for computers; and requirements for installing a control system for the specific diesel engine pump drives required by this project.

INST-2.5 Utilization of small business concerns.

INST-2.5.1 Completed contracts. This subparagraph applies to offerors that are small business concerns (including all categories) and to offerors that are other than small business concerns. FAR 52.219-8, Utilization Of Small Business Concerns, states the Government's policy that small business (SB) concerns, veteran-owned small business (VOSB) concerns, service-disabled veteran-owned small business (SDVOSB) concerns, HUBZone small business concerns, small disadvantaged business (SDB) concerns, and women-owned small business (WOSB) concerns have the maximum practicable opportunity to participate in performing contracts. For each of the 3 most recently completed federal contracts submit one of the following: (i) if the contract required a subcontracting plan, submit the final SF 294, Subcontracting Report For Individual Contract, or (ii) if the contract did not require a subcontracting plan, complete and submit the Utilization of Small Business Concerns Information Collection Sheet (Completed Contracts). (A copy of the sheet is attached.) Offerors that are SB, VOSB, SDVOSB, HUBZone SB, SDB, or WOSB may count work performed with in-house resources toward compliance with FAR 52.219-8 in the category (or categories) to which they belong. (For example, a HUBZone SDB could count work in 3 categories: SB, HUBZone, and SDB.)

INST-2.5.2 Proposed for this contract. In accordance with FAR 15.304(c)(4), the extent of participation of small disadvantaged business (SDB) concerns shall be evaluated. Further, in accordance with DFARS 215.304(c)(i), the extent of participation of small businesses (SB) and historically black colleges or universities and minority institutions (HBCU/MI) shall be evaluated. The elements to be evaluated are:

(1) The extent to which SDB's, SB's, and HBCU/MI's are specifically identified in the proposal. (If the successful offeror is required to submit a subcontracting plan before award, firms identified in the proposal must also be listed in the subcontracting plan.)

(2) The extent of commitment to use such firms (for example, enforceable commitments will be weighted more heavily than non-enforceable commitments).

(3) The complexity and variety of work such firms will perform.

(4) The realism of the proposal.

(5) The extent of participation of such firms in terms of the total price of the proposal (including options, if applicable).

To facilitate the evaluation, the offeror shall provide the following information:

This requirement applies to offerors that are small business concerns (including all categories) and to offerors that are other than small business concerns. For this proposal, for each category (i.e., SDB, SB, and HBCU/MI) provide adequate responses to elements (1), (2), (3), and (5) above. Offerors that are SDB, SB, or HBCU/MI may count work performed with in-house resources toward compliance with this requirement; however, they must identify applicable category. (For example, if the offeror is SDB, all work to be performed with in-house resources can be used when formulating responses related to proposed SDB participation as well as SB participation. Offerors that are other than small business firms may elect to fulfill this requirement by responding as described above or by submitting a formal plan in accordance with the Small, Small Disadvantaged And Woman-Owned Small Business Subcontracting Plan clause of this solicitation.)

INST-2.6 Packaging the Proposal. The proposal shall be divided as indicated in the following table and each division shall be submitted in a separate sealed package. Each package shall be marked with the offeror's name, the solicitation number, and the package number.

Package	No. of Copies	Items
1	2	Price proposal, bond, representations & certifications, and information related to utilization of small business concerns (when applicable) (Paragraphs INST-2.1, INST-2.2, INST-2.3, and INST-2.5). Each copy shall be separately bound.
2	2	Past performance information (Paragraph INST-2.4). Each copy shall be separately bound.

INST-2.7 Proposal Format. To assist in ensuring a complete, well-organized proposal, the Government has included a proposal format at the end of this section for the offeror's use.

Source Selection Information -- See FAR 2.101 and 3.104

PROPOSAL IN RESPONSE TO SOLICITATION NO. W912EP-04-R-0006

OFFEROR'S NAME:
OFFEROR'S ADDRESS:
OFFEROR'S POINT OF CONTACT (POC):
POC's TELEPHONE:
POC's FAX:
POC's EMAIL:

THIS OFFER IS SUBMITTED IN SEPARATE PACKAGES AS FOLLOWS:

[Offeror - check each applicable item and enter NA for non-applicable items.]

____Package one is submitted in 2 separately bound copies and contains our price proposal, bond (if required by the solicitation), representations & certifications, and information related to utilization of small business concerns (if required by the solicitation).

____Package two is submitted in 2 separately bound copies and contains past performance information.

Source Selection Information -- See FAR 2.101 and 3.104

SOLICITATION NO. W912EP-04-R-0006

OFFEROR: _____

COVER SHEET
PACKAGE ONE

This package contains the following documents: [Offeror - check applicable items and mark others NA.]

____1. Signed price proposal (SF 1442, SF 33, or SF 1449) with line item pricing schedule.
____2. Bid bond.
____3. Representations and certifications.
____4. A Utilization of Small Business Concerns Information Collection Sheet (Completed Contracts) or SF294, Subcontracting Report, for each of the 3 most recently completed federal contracts.
____5. Information regarding proposed utilization of small business concerns on this contract.

Source Selection Information -- See FAR 2.101 and 3.104

SOLICITATION NO. W912EP-04-R-0006

OFFEROR: _____

COVER SHEET
PACKAGE TWO

[Offeror - check applicable items]

____1. This package contains a Past Performance Information Collection Sheet for each relevant contract/subcontract (as defined in the solicitation). On each collection sheet, we have explained how we determined that the contract/subcontract is relevant to this project.

____2. If problems were encountered during performance of any of the referenced contracts/subcontracts, we have attached a paper to the collection sheet that fully explains the problem and details the corrective action we took to resolve the problem. If we did not check this paragraph and did not attach explanations to the collection sheets, you may assume that we consider any problems that may have occurred to be minor and insignificant.

PAST PERFORMANCE INFORMATION COLLECTION SHEET (Submit this sheet with Package 2 of your proposal)	
(TO BE COMPLETED BY THE OFFEROR. SUBMIT A SEPARATE SHEET FOR EACH REFERENCE.)	
	1. Your firm's name:
	2. Contract number of referenced project:
	3. Description, location & relevancy of work: *(Note: Relevancy is defined as something that has a logical connection with the matter under consideration, e.g., similar project size and type of work. It is the offeror's responsibility to establish relevancy.)*
	4. Owner's name and address:
	5. Owner's point of contact (name and telephone number) *(NOTE: <u>IT IS YOUR RESPONSIBILITY TO ENSURE POINTS OF CONTACT CAN BE CONTACTED BY THE GOVERNMENT'S EVALUATORS AND THAT THEY WILL COOPERATE</u>.)*:
	6. Prime contractor's name and address if you were a subcontractor on this project:
	7. Your role (e.g., Prime, Member of Joint Venture, Subcontractor, etc.) and work performed by your in-house forces:
	8. Contract price:
	9. Extent and type of work you subcontracted to other firms *(Note: See paragraph INST-2.6 of Proposal Submission Requirements for separate requirement for information regarding utilization of small business concerns. Information submitted in response to paragraph INST-2.6 must be submitted separately in package 1 of the proposal.)*:
	10. Date started _____ and date completed_____. (If not completed, give percentage of completion and expected completion date.)
	11. Did you receive a written performance evaluation for this project? (Yes/No) If yes, what rating did you receive?
	12. Was your contract/subcontract terminated for default? If so, attach an explanation of the circumstances.
	13. Were liquidated damages assessed? If so, attach an explanation of the circumstances.

Utilization of Small Business Concerns Information Collection Sheet (Completed Contracts) (Submit this sheet with Package 1 of your proposal)	
(TO BE COMPLETED BY THE OFFEROR. SUBMIT A SEPARATE SHEET FOR EACH REFERENCE.)	
The purpose of this sheet is to collect information regarding compliance with FAR 52.219-8 in previous contracts. The categories of interest are: small business (SB), small disadvantaged business (SDB), veteran-owned small business (VOSB), service-disabled veteran-owned small business (SDVOSB), HUBZone small business, and women-owned small business (WOSB). Definitions for all terms except small business concern can be found at FAR 2.101. The definition of small business concern can be found at FAR 19.001. For this collection sheet, any concern unable to meet the definition for small business concern shall be considered a large business (LB) concern. A SB concern may also qualify in one or more of the other categories. When completing the sheet, the offeror should check all categories that apply.	
1. Your firm's name:	2. Contract number of referenced project:
3. Date completed____________. *(Do not submit information for an active contract.)*	4. Contract price: $___________________
5. Total amount subcontracted: $______________ Amount subcontracted to: LB: $________________ SB (in this total include all awards to SB, SDB, HUBZone SB, VOSB, SDVOSB, and WOSB): $_________________	6. Of the total amount subcontracted to SB, how much was subcontracted to: SDB: $________________ HUBZone SB: $_________________ VOSB: $________________ SDVOSB: $_________________ WOSB: $____________________
7. Contracting Officer's name and telephone number:	8. In blocks below enter dollar amount for work performed by your firm and by each listed subcontractor:

Name of Firm: Offeror	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							
Name of Firm:	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							
Name of Firm:	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							
Name of Firm:	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							
Name of Firm:	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							
Name of Firm:	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							
Name of Firm:	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							
Name of Firm:	CHECK EACH CATEGORY THAT APPLIES						
Phone:	LB	SB	SDB	HUBZONE SB	VOSB	SDVOSB	WOSB
Amount: $							

SECTION 00100B
INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

(TRADE-OFF BETWEEN PAST PERFORMANCE, UTILIATION OF SMALL BUSINESS CONCERNS, AND PRICE)
(AWARD WITHOUT DISCUSSIONS)

EVALUATION FACTORS FOR AWARD

EVAL-1 Applicable Regulatory Guidance. This source selection will be conducted in accordance with procedures prescribed in FAR Part 15.

EVAL-2 Determining Best Value. The Contracting Officer will use a trade-off process to determine which offer represents the best value to the Government. This process allows the Contracting Officer to consider making award to other than the lowest priced offeror or other than the highest rated offeror. All evaluation factors other than price, when combined, are slightly more important than price.

EVAL-3 Evaluation Factors. The following factors and significant subfactors will be used to determine best value. The relative importance of non-price factors/subfactors is as indicated.

EVALUATION FACTORS (TRADE-OFF)		
FACTOR	SUBFACTOR	RELATIVE IMPORTANCE/OTHER INFORMATION
Price	N/A	See paragraph EVAL-2 above.
Past Performance	N/A	Past Performance is significantly more important that Utilization of Small Business Concerns
	Generally, the Government will evaluate timely completion of work; quality of work; customer satisfaction; cost controls for additional work; and safety. However, the Government reserves the right to evaluate other areas and reserves the right to determine, on a case-by-case basis, how much emphasis to place on any given area.	
Utilization of Small Business Concerns	N/A	Utilization of Small Business Concerns is significantly less important that Past Performance
	Completed Contracts	This subfactor is equal to the Proposed For This Contract subfactor.
	Proposed For This Contract	This subfactor is equal to the Completed Contracts subfactor.

EVAL-4 Rating Definitions. Following table shows ratings for each type of evaluation and gives definitions for the ratings.

PRICE/COST is not rated. It is evaluated for reasonableness.

PERFORMANCE RISK (Past Performance) ratings assess the risks associated with each offeror's likelihood of success in performing the requirements stated in the RFP based on that offeror's demonstrated performance on recent, relevant contracts. The risk assessment will be based on two components, i.e., ratings for past work and relevancy of past work to this project. Less relevant work will receive less weight. It is the offeror's responsibility to establish relevancy of past work to this project.	
RATING	DEFINITION
Outstanding	Offeror's past performance record reflects a consistent commitment to quality work and customer satisfaction with few problems, all of which were immediately corrected.
Above Average	Offeror's past performance record reflects a consistent commitment to quality work and customer satisfaction with few problems, most of which were immediately corrected.
Satisfactory	Offeror's past performance record is inconsistent—mostly good but some bad. Several problems were encountered. Most were satisfactorily resolved. Some required extra effort on the part of QA/inspection personnel to obtain resolution.
None	The offeror has no relevant performance record. A thorough search was unable to identify any past performance information.
Marginal	Offeror's past performance record is inconsistent—some good but mostly bad. Several problems were encountered. Some were satisfactorily resolved. Too many required extra effort on the part of QA/inspection personnel to obtain resolution.
Unsatisfactory	Offeror's past performance record reflects a consistent lack of commitment to quality work and customer satisfaction.

RELEVANCE	**DEFINITION**
Highly Relevant	Past projects bear a strong correlation to this project in size, scope, and type of work.
Moderately Relevant	Past projects correlate to this project in most but not all respects.
Slightly Relevant	Past projects correlate to this project in a few respects.

RISK	**DEFINITION**
Very Low Risk	Offeror received Outstanding rating for Highly Relevant past performance.
Low Risk	Offeror received either: (1) Outstanding rating for Moderately Relevant past performance, or (2) Above Average rating for Highly Relevant past performance.
Moderate Risk	Offeror received: (1) Outstanding rating for Slightly Relevant past performance, (2) Above Average rating for Moderately Relevant past performance, (3) Above Average rating for Slightly Relevant past performance, or (4) Satisfactory rating for Highly Relevant past performance .

Unknown Risk	The offeror has no relevant performance record; therefore, offeror received no rating. A thorough search was unable to identify any past performance information.
High Risk	Offeror received: (1) Satisfactory rating for Moderately Relevant past performance, (2) Satisfactory rating for Slightly Relevant past performance, or (3) Marginal rating for Highly Relevant past performance.
Very High Risk	Offeror received: (1) Marginal rating for Moderately Relevant past performance, (2) Marginal rating for Slightly Relevant past performance, (3) Unsatisfactory rating for Highly Relevant past performance, (4) Unsatisfactory rating for Moderately Relevant past performance, or (5) Unsatisfactory rating for Slightly Relevant past performance.

Utilization of Small Business Concerns ratings reflect the Government's assessment of the offeror's commitment to the policy stated in FAR 52.219-8.	
RATING	DEFINITION
Outstanding	The offeror's proposed utilization of small business concerns for this contract when considered together with the offeror's record of utilization of small business concerns in previous contracts reflects outstanding commitment to the policy stated in FAR 52.219-8. (Note: FAR 19.708 requires use of the clause at FAR 52.219-8 in almost all contracts with a value of more than $100,000. However, if the offeror has never had a contract that included FAR 52.219-8, the rating for this factor shall be based solely on the offeror's proposed utilization of small business concerns for this contract.)
Above Average	The offeror's proposed utilization of small business concerns for this contract when considered together with the offeror's record of utilization of small business concerns in previous contracts reflects above average commitment to the policy stated in FAR 52.219-8. (Note: FAR 19.708 requires use of the clause at FAR 52.219-8 in almost all contracts with a value of more than $100,000. However, if the offeror has never had a contract that included FAR 52.219-8, the rating for this factor shall be based solely on the offeror's proposed utilization of small business concerns for this contract.)
Satisfactory	The offeror's proposed utilization of small business concerns for this contract when considered together with the offeror's record of utilization of small business concerns in previous contracts reflects satisfactory commitment to the policy stated in FAR 52.219-8. (Note: FAR 19.708 requires use of the clause at FAR 52.219-8 in almost all contracts with a value of more than $100,000. However, if the offeror has never had a contract that included FAR 52.219-8, the rating for this factor shall be based solely on the offeror's proposed utilization of small business concerns for this contract.)
Marginal	The offeror's proposed utilization of small business concerns for this contract when considered together with the offeror's record of utilization of small business concerns in previous contracts reflects marginal commitment to the policy stated in FAR 52.219-8. (Note: FAR 19.708 requires use of the clause at FAR 52.219-8 in almost all contracts with a value of more than $100,000. However, if the offeror has never had a contract that included FAR 52.219-8, the rating for this factor shall be based solely on the offeror's proposed utilization of small business concerns for this contract.)

Unsatisfactory	The offeror's proposed utilization of small business concerns for this contract when considered together with the offeror's record of utilization of small business concerns in previous contracts reflects unsatisfactory commitment to the policy stated in FAR 52.219-8. (Note: FAR 19.708 requires use of the clause at FAR 52.219-8 in almost all contracts with a value of more than $100,000. However, if the offeror has never had a contract that included FAR 52.219-8, the rating for this factor shall be based solely on the offeror's proposed utilization of small business concerns for this contract.)

EVAL-5 Proposal Evaluation. The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. Further, if the Contracting Officer determines that discussions are necessary and if the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals. The following table synopsizes the evaluation methodology:

ELEMENT	METHOD
General Review	Review of entire proposal to ascertain completeness and offeror's eligibility for award.
Price	Price will not be given a score. It will be reviewed for possible mistakes and eligibility for award, and evaluated for reasonableness.
Past Performance	Will be evaluated for risks associated with the proposal. Possible ratings are: Very Low, Low, Moderate, Unknown, High, and Very High. An "unknown risk" rating will have neither a favorable nor an unfavorable impact on the overall evaluation of the proposal. However, if necessary, the Contracting Officer can consider favorable or unfavorable past performance history as a tiebreaker when comparing offerors who have no past performance history with offerors who do have past performance history. For example, if all other factors are relatively equal, an offeror with a favorable past performance history may be selected over an offeror with no past performance history; or, an offeror with no past performance history may be selected over an offeror with an unfavorable past performance history.
Utilization of Small Business Concerns	Will be evaluated for commitment to policy stated in FAR 51.219-8. Possible ratings are: Outstanding, Above Average, Satisfactory, Marginal, and Unsatisfactory.
Source Selection Decision	Evaluators will provide results of evaluations to the Contracting Officer who will, through a trade-off process involving all evaluation factors, determine which proposal represents the best overall value to the Government.

EVAL-5.1 General Review.

EVAL-5.1.1 Offerors will be checked against the *List of Parties Excluded From Federal Procurement and Nonprocurement Programs*. Any offeror who is listed will be eliminated without further consideration.

EVAL-5.1.2 Bid bonds will be reviewed for acceptability. Any offeror whose bid bond is unacceptable, will be eliminated without further consideration unless the Contracting Officer later determines that discussions are necessary and decides that the offeror's proposal should be included in the competitive range.

EVAL-5.1.3 Proposals will be checked for minor informalities or irregularities. The Contracting Officer will follow guidance at FAR 14.405 when resolving minor informalities or irregularities. The Contracting Officer either will give the offeror an opportunity to cure any defect resulting from a minor informality or irregularity or waive the defect, whichever is to the advantage of the Government.

EVAL-5.2 Price Evaluation.

EVAL-5.2.1 Prices will be reviewed for minor or clerical errors. If necessary, offerors will be afforded an opportunity to resolve any such errors. Any exchange with offerors under this subparagraph shall be for the purpose of clarification (FAR 15.306(a)) and shall not constitute negotiations as defined at FAR 15.306(d). In the event of discrepancy between a unit price and the extended amount, the unit price shall be controlling.

EVAL-5.2.2 Prices will be reviewed for apparent mistakes. Should this review reveal any prices that seem unreasonably low, the Contracting Officer will contact the offeror and ask the offeror to confirm the questioned price. If the offeror confirms the price, no further action will be taken under this subparagraph. If, however, the offeror alleges a mistake, the offeror may modify the proposal in accordance with FAR 52.215-1(c)(6). Any modification submitted for the purpose of correcting a mistake shall include documentation explaining how the mistake was made.

EVAL-5.2.3 After resolution of minor or clerical errors and/or mistakes, prices will be reviewed for reasonableness.

EVAL-5.3 Past Performance Evaluation. The Government will consider currency and relevance of the information, source of the information, context of the data, and general trends in the offeror's performance. Information will be weighted in accordance with its relevance. The Government may use information supplied by the offeror and information obtained from other sources. The evaluation will be conducted by telephone. If, during the course of the evaluation, the Government obtains adverse information that the offeror has not previously been made aware of, the Government will afford the offeror an opportunity to respond to the information. The Government will not disclose the names of persons who provide performance information. The evaluation will take into account past performance information regarding predecessor companies, key personnel who have relevant experience, and subcontractors that will perform major or critical aspects of the work. (Note: Although the Government may obtain past performance information from other sources, it is the offeror's responsibility to provide past performance information and explain how the information is relevant to this acquisition.)

EVAL-5.4 Utilization of Small Business Concerns. The Government will evaluate the offeror's record of compliance with FAR 52.219-8 and (if applicable) the offeror's record of execution of subcontracting plans. Additionally, the Government will evaluate the offeror's proposed utilization of small business concerns for this contract.

EVAL-5.5 Source Selection Decision. The Contracting Officer, independently exercising prudent business judgment, will make the source selection decision based on the proposal that represents the best value to the Government. The Contracting Officer will not receive a recommendation from any individual or body as to which offeror should receive the award and additionally will not receive a rank order or order of merit list pertaining to the offers being evaluated.

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01270

MEASUREMENT AND PAYMENT

-- End of Section Table of Contents --

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SUMMARY

This section describes how Line Items will be measured and paid for progress payments. Work to be measured is described in specification sections listed for each Line Item. Measurement procedures for payment, required quantity survey or procurement documentation and payment restrictions are described in applicable specification sections. Allocate costs for work not specifically mentioned to the Line Item most closely associated with work involved. Unless there is a specific Line Item for administrative costs, such as Quality Control and Safety, allocate such costs proportionally across all Line Items.

1.2 DEFINITIONS

The terms "Contract Line Item Number (CLIN)" and "Line Item" are interchangeable herein (e.g.: CLIN 0001 is Line Item 0001). The term "CLIN" is a contracting term used in the Quality Control System (QCS) payment data base. See Section 01312 QUALITY CONTROL SYSTEM (QCS).

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Transmit submittal items in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Schedule of Values; G|COR

Provide a breakdown of lump sum items into proposed pay activities. Schedule of Values will become basis for CLIN and Pay Activity data in the QCS payment data base.

SD-07 Certificates

Invoices

Submit invoices from Florida Power and Light Company for establishment of electrical service under Line Item 0003AB, and BellSouth for establishment of telephone service under Line Item 0003AC after completion of work for each. Invoices shall indicate the Contractor's payment for services rendered.

1.4 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the LINE ITEMS AND PRICING SCHEDULE and

described below. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection and monitoring, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.4.1 Pump Station (Line Item 0003)

Payment will be made under Line Item 0003AA "Construction" for all costs associated with or incidental to pump station construction not in other bid items, including riprap, steel sheet pile walls, concrete placement, rock anchors, substructure, superstructure, mechanical work, pumping equipment, fuel system, electrical and control work, water well, test hole, well pump and piping to the building, sanitary holding tank and piping to the building, monitoring wells, levee construction, excavation and backfilling, equipment pads outside the building, pavement, aggregate surfacing, seeding, sodding, grading, concrete ramps, signs, barriers, and fences. Payment will also include actual cost for establishment of electrical service by Florida Power and Light Company under Line Item 0003AB "Electrical Service", and establishment of telephone service by BellSouth under Line Item 0003AC "Telephone Service" after the Government Receives valid invoices for these services (see paragraph SUBMITTALS above). The Contractor will be reimbursed no more than the amount indicated on the invoices under Line Items 0003AB and 0003AC. No payment will be made for establishment of electrical or telephone service prior to completion of this work and receipt of valid invoices by the Government.

1.4.2 Culvert Stuctures (Line Item 0006)

Payment will be made for costs associated with or incidental to all demolition, excavation, foundation preparation, furnishing and installation of the culvert structure, placing backfill, paving, and guardrails.

1.4.3 Traffic Control and Signage (Line Item 0007)

Payment will be made for costs associated with or incidental to furnishing, installing, and removing all temporary traffic control devices and features for temporary detours required for the full duration of culvert installations required under the contract. Also, payment will be made for costs associated with or incidental to furnishing and installing Type I and Type II dead end signs.

1.4.4 Aggregate Paving for Access Road (Line Item 0010)

Payment will be made for costs associated with or incidental to furnishing and constructing required aggregate paving.

1.4.5 Concrete Apron for Weirs (Line Item 0011)

Payment will be made for all costs associated or incidental to placement of concrete aprons levees to form three weirs, including preparation of levee subgrade.

1.5 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the LINE ITEMS AND PRICING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection and monitoring, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

1.5.1 Excavation, Common (Line Item 0001)

1.5.1.1 Payment

Payment will be made for costs associated with or incidental to excavation, transportation, and disposal of materials for channel, structure, and utilities; providing and maintaining access to the work site(s) and disposal area(s); removal of utility cable; noise control; and debris removal~~; and, monitoring the eastern indigo snake~~.

1.5.1.2 Measurement

a. The maps and/or drawings already prepared (paragraph CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS of Section 00800 SPECIAL CONTRACT REQUIREMENTS) are believed to represent accurately average existing conditions, but the depths shown thereon may be verified. Determination of quantities removed and the deductions made therefrom to determine quantities by place measurement to be paid for in the area specified, after having once been made, will not be reopened, except on evidence of collusion, fraud, or obvious error.

b. The total amount of material removed, and to be paid for under the contract, will be measured by the cubic yard in place and quantities determined by the average end area method.

1.5.1.3 Unit of Measure

Cubic yard.

1.5.2 Excavation, Rock (Line Item 0002)

1.5.2.1 Payment

Payment will be made for costs associated with or incidental to drilling, blasting, excavation, transportation, embankment, fill, compaction, and disposal of rock for channel, structure, and utilities, and noise control.

1.5.2.2 Measurement

a. The maps and/or drawings already prepared (paragraph CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS of Section 00800 SPECIAL CONTRACT REQUIREMENTS) are believed to represent accurately average existing conditions, but the depths shown thereon may be verified. Determination of quantities removed and the deductions made therefrom to determine quantities by place measurement to be paid for within a specified reach or section, after having once been made, will not be reopened, except on evidence of collusion, fraud, or obvious error.

b. The total amount of material removed, and to be paid for under the contract, will be measured by the cubic yard in place and quantities determined by the average end area method.

1.5.2.3 Unit of Measure

Cubic yard.

1.5.3 Common Excavation (Line Items 0004 and 0009)

1.5.3.1 Payment

Payment will be made for costs associated with or incidental to clearing, grubbing, stripping, excavation, transportation, embankment, levee fill and compaction, and disposal of materials, filling and capping wells encountered, providing and maintaining access to the work site(s) and disposal area(s), removal of utility cable, noise control, and debris removal.

1.5.3.2 Measurement

The total amount of material removed, and to be paid for under this contract, will be measured by the volume in place prior to excavation with quantities determined by the average end area method. The Government will perform initial and final surveys in accordance with the clause QUANTITY SURVEYS of Section 00700 CONTRACT CLAUSES. Cross sections will be taken at an 100-foot interval. The cross sections used for calculation of final quantities will be determined from the original survey performed by the Government after clearing and before excavation, and the finished grades shown on the drawings. The final survey performed by the Government will be used to verify that excavation and embankment/levee fill are complete to the required finished grades, and that tolerances have not been exceeded. Embankment and levee fill will not be included in quantities calculated for final payment. Excavation below required finished grades will not be included in quantities calculated for final payment. The estimated quantity for this line item does not include tolerances. The Contractor is responsible for considering the cost of required tolerances, and including this cost in the unit price for this line item (See Section 00010A LINE ITEMS AND PRICING SCHEDULE). Cross sections used for calculation of quantities for progress payments will be determined from the original survey perfomed by the Government, and elevations above finished grade obtained from progress surveys performed by the Contractor in accordance with the clause QUANTITY SURVEYS of Section 00700 CONTRACT CLAUSES.

1.5.3.3 Unit of Measure

Cubic yard.

1.5.4 Rock Excavation (Line Item 0005)

1.5.4.1 Payment

Payment will be made for costs associated with or incidental to drilling, blasting, excavation, transportation, embankment, levee fill, compaction and disposal of rock, and noise control.

1.5.4.2 Measurement

The total amount of rock removed, and to be paid for under this contract,

will be measured by the volume in place prior to excavation with quantities determined by the average end area method. The Government will perform initial and final surveys in accordance with the clause QUANTITY SURVEYS of Section 00700 CONTRACT CLAUSES. Cross sections will be taken at an 100-foot interval. The cross sections used for calculation of final quantities will be determined from the original survey performed by the Government after clearing and before excavation, and the finished grades shown on the drawings. The final survey performed by the Government will be used to verify that excavation is complete to the required finished grades, and that tolerances have not been exceeded. Excavation below required finished grades will not be included in quantities calculated for final payment. The estimated quantity for this line item does not include tolerances. The Contractor is responsible for considering the cost of required tolerances, and including this cost in the unit price for this line item (See Section 00010A LINE ITEMS AND PRICING SCHEDULE). Cross sections used for calculation of quantities for progress payments will be determined from the original survey perfomed by the Government, and elevations above finished grade obtained from progress surveys performed by the Contractor in accordance with the clause QUANTITY SURVEYS of Section 00700 CONTRACT CLAUSES.

1.5.4.3 Unit of Measure

Cubic yard.

1.5.5 Seeding (Line Items 0008 and 0012)

1.5.5.1 Payment

Payment will be made for costs associated with or incidental to furnishing, planting, and maintaining seed, that results in a healthy stand of grass cover as required, including the provision and use of equipment, erosion control methods and materials, fertilizers, soil amendments, mulch, pesticides, and water.

1.5.5.2 Measurement

The actual horizontal area that receives seed will be measured for payment.

1.5.5.3 Unit of Measure

Acre.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 PAYMENT PROCEDURES

See Section 01312 QUALITY CONTROL SYSTEM (QCS) for in-depth payment procedure instructions. Upon receiving initial Resident Management System import file, go to "Pay Activities" and establish a link between bid breakdown schedule of values of "Pay Activities" to contract CLINs using "Schedule Activities" data entry page.

3.1.1 Requesting Progress Payment

For progress payments, ensure "Activity Schedule", "Feature Schedule", submittal register, and punchlists are all up to date. Use "Progress

Payments" to "request Activity Earnings" for both "Activity Earnings" data entry page and "Other Earning". Provide hard copies of supporting invoices and quantity measurements to support all requested earnings. Ensure that sum of payment activities do not exceed contract award CLIN funding amounts, or "unbalanced" CLINs error will prevent processing the payment.

3.1.2 Options and Modification CLINS

When additional work is added by modification, existing CLINs funding amounts must be updated, or new CLINs for modification will be created. If contract has option CLINs not yet awarded, option CLINs will appear as zero dollar CLINs until option is awarded by modification. No payment may be requested for Options or Modification CLINs until contract modification has been funded and signed.

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION: MWD to ENP, 8.5 Square Mile Area (Rev Am #0003)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						REMARKS
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		01270	SD-01 Preconstruction Submittals															
			Schedule of Values		G	COR												
			SD-07 Certificates															
			Invoices															
		01310	SD-01 Preconstruction Submittals															
			List of Subcontractors															
			Signature Authority															
			Drug-Free Work Place Record															
		01312	SD-01 Preconstruction Submittals															
			First QCS Export		G	COR												
		01320	SD-01 Preconstruction Submittals															
			Preliminary Project Schedule		G	COR												
			(PPS)															
			Initial PPS		G	COR												
			SD-07 Certificates															
			Periodic Schedule Updates	3.4.3	G	COR												
		01330	SD-01 Preconstruction Submittals															
			Export File		G	COR												
		01355	SD-01 Preconstruction Submittals															
			Environmental Protection Plan		G	PD												
			Eastern Indigo Snake Observer		G	PD												
			SD-11 Closeout Submittals															
			Logs/Final Summary Report															
			FIO															
			Eastern Indigo Snake Monitoring															
			Report															

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		01355	Project Environmental Summary																
			Sheet																
		01451	SD-01 Preconstruction Submittals																
			Laboratory Qualifications	3.7.2	G	COR													
			Contractor Quality Control (CQC)	3.2	G	COR													
			Plan																
			Letter of Authority	3.2.2															
		01500	SD-01 Preconstruction Submittals																
			Mobilization/Demobilization Plan																
			Security Plan	3.7															
			Manufacturer's Literature for																
			Equipped Boat, Trailer, and																
			Hand-Held Radios																
			SD-02 Shop Drawings																
			Contractor's Temporary Facilities	3.6															
			Contracting Officer's Field Office	2.1															
			Trailer																
			Temporary Electric Drawings																
			Construction Drawings		G	COR													
		01525	SD-01 Preconstruction Submittals																
			Accident Prevention Plan (APP)	1.6	G	COR													
			Activity Hazard Analyses (AHA)	1.7	G	COR													
			Employee Safety and Health																
			Indoctrination (ESHI) and Training																
			Plan																
			Hazard Communication Plan	1.9															

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CONTRACTOR

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		01525	Emergency Response Plan	1.11														
			Hurricane and Severe Storm Plan	1.10	G COR													
			Dive Operations Plan		G COR													
			Critical Lift Plan		G COR													
			Confined Space Plan	1.14	G COR													
			Spill Response Plan		G COR													
			Blasting Safety Plan		G COR													
			SD-04 Samples															
			Sample Scaffold															
			SD-07 Certificates															
			Safety Officer Qualifications	1.16.1	G COR													
			Crane Equipment	1.21.5														
		01550	SD-01 Preconstruction Submittals															
			Traffic Control Plan		G COR													
		01780	SD-02 Shop Drawings															
			As-Built Drawings	1.2.1	G COR													
			SD-03 Product Data															
			As-Built Record of Equipment and	1.2.2	G ED													
			Materials															
			Warranty Management Plan	1.3.1	G ED													
			Warranty Tags	1.3.5	G ED													
			Final Cleaning	1.6	G ED													
		01810	SD-01 Preconstruction Submittals															
			Commissioning Team		G COR													
			SD-03 Product Data															
			Tests		G COR													

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		01810	Test Schedule		G COR													
			SD-06 Test Reports															
			Test Reports		G COR													
		02164	SD-01 Preconstruction Submittals															
			Employee Experience															
			SD-02 Shop Drawings															
			Load Test Set-Up															
			Installation		G ED													
			SD-06 Test Reports															
			Grouting Records															
			Anchor Test Results															
			Core Log of Each Hole															
			Grout Compression Tests															
			Installation															
			SD-07 Certificates															
			Threadbars		G ED													
			Grout Ingredients		G ED													
			Test Jacks and Gages		G ED													
		02222	SD-01 Preconstruction Submittals															
			Shot Plans		G COR													
		02230	SD-03 Product Data															
			Materials Other Than Salable		G COR													
			Timber															
		02315	SD-06 Test Reports															
			Testing	3.12														
		02316	SD-06 Test Reports															

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		02316	Field Density Tests	3.4.3	G	ED												
		02331	SD-03 Product Data															
			Earthwork		G	EN												
			Excavation		G	COR												
			Plan of Operations		G	COR												
			Nuclear Density		G	COR												
			SD-06 Test Reports															
			Testing		G	EN												
			Nuclear Density Test Report		G	ED												
			Measurement of Fill Material		G	COR												
			SD-07 Certificates															
			Testing		G	EN												
		02380	SD-03 Product Data															
			Riprap	2.2.2	G	ED												
			SD-04 Samples															
			Stone		G	ED												
			SD-06 Test Reports															
			Gradation Test	2.2.1.2	G	ED												
			SD-07 Certificates															
			Stone		G	ED												
			Weigh Scale Certification															
			Certified Weight Scale Tickets															
		02464	SD-02 Shop Drawings															
			Metal Sheet Piling	2.1	G	COR												
			Driving	3.1.4														
			SD-03 Product Data															

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		02464	Pile Driving Equipment	3.1.1	G COR													
			Pulling and Redriving	3.1.7	G COR													
			SD-06 Test Reports															
			Materials Tests	2.3.1														
		02510	SD-03 Product Data															
			Installation	3.1														
			Waste Water Disposal Method		G ED													
			Satisfactory Installation															
			SD-06 Test Reports															
			Bacteriological Disinfection	3.3.1														
		02521	SD-01 Preconstruction Submittals															
			Qualifications	1.5														
			Permits															
			SD-02 Shop Drawings															
			Installation Diagrams	3.13.2	G ED													
			Submersible Well Pump		G ED													
			Assembly															
			Electrical Well Pump Controls		G ED													
			SD-03 Product Data															
			Well Installation Plan	1.4	G ED													
			Catalog Data		G ED													
			SD-06 Test Reports															
			Survey Maps and Notes	3.13.6														
			Boring Logs															
			Well Development Records	3.13.3														

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TITLE AND LOCATION: MWD to ENP, 8.5 Square Mile Area (Rev Am #0003)

CONTRACTOR

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		02521	Decommissioning/Abandonment	3.12															
			Records																
			Project Photographs	3.13.5															
			Water Source	3.2.1	G ED														
			Filter Pack	2.3															
			Tests	3.5															
			SD-10 Operation and Maintenance																
			Data																
			Operation and Maintenance		G ED														
			Manuals																
		02522	SD-02 Shop Drawings																
			Installation Diagrams	3.7.2	G ED														
			Survey Maps and Notes	3.7.4															
			SD-03 Product Data																
			Borehole Logs	3.7.1															
			Well Development Records	3.7.3															
			Monitoring Wells		G ED														
			Permits	1.8															
			Installation Plan	1.5	G COR														
			SD-06 Test Reports																
			Water Source	3.2.2															
			Filter Pack	2.4															
			Drilling Fluid Additive	3.3.1															
		02635	SD-07 Certificates																
			Mill Analyses Certificate																
			SD-08 Manufacturer's Instructions																

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		02635	Assembly Instructions																
		02741	SD-03 Product Data																
			Mix Design	2.3	G	CO													
			Contractor Quality Control	3.9	G														
			CO																
			Material Acceptance and Percent		G														
			Payment																
			SD-06 Test Reports																
			Aggregates	2.1	G	CO													
			QC Monitoring	3.9.3.10															
			SD-07 Certificates																
			Asphalt Cement Binder	2.2	G	CO													
			Testing Laboratory	3.5	G	CO													
		02748	SD-03 Product Data																
			Waybills and Delivery Tickets		G	COR													
			SD-06 Test Reports																
			Sampling and Testing	3.7	G	COR													
		02821	SD-07 Certificates																
			Chain Link Fence	2.1.1	G	COR													
		02921	SD-03 Product Data																
			Equipment	3.1.2															
			Equipment	3.1.2															
			Surface Erosion Control Material	2.6															
			Chemical Treatment Material	1.3.3															
			Delivery	1.3.1															
			Finished Grade	3.2.1															

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		02921	Quantity Check	3.5	G COR													
			Seed Establishment Period	3.9	G COR													
			Maintenance Record	3.9.3.5														
			Application of Pesticide	3.6	G COR													
			SD-04 Samples															
			Soil Amendments	2.2														
			Mulch	2.3														
			SD-06 Test Reports															
			Equipment Calibration	3.1.2	G COR													
			Soil Test	3.1.3														
			SD-07 Certificates															
			Seed	2.1	G COR													
			pH Adjuster	2.2.1	G COR													
			Fertilizer	2.2.2	G COR													
			Organic Material	2.2.4	G COR													
			Soil Conditioner	2.2.5	G COR													
			Mulch	2.3	G COR													
			Asphalt Adhesive		G COR													
			Pesticide	2.5	G COR													
		02922	SD-03 Product Data															
			Delivery	1.4.1														
			Finished Grade and Topsoil	3.2.1														
			Topsoil	2.2														
			Quantity Check	3.4														
			Sod Establishment Period	3.7														
			Maintenance Record	3.7.3.4														

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		02922	SD-06 Test Reports															
			Equipment Calibration	3.1.3														
			Soil Test	3.1.4														
			SD-07 Certificates															
			Sod	2.1														
			Topsoil	2.2														
			Fertilizer	2.3.1														
		03100	SD-02 Shop Drawings															
			Formwork	3.1.1	G	ED												
			SD-03 Product Data															
			Design	1.3	G	ED												
			Form Materials	2.1	G	ED												
		03151	SD-03 Product Data															
			Splicing Waterstops	2.2.2														
			SD-04 Samples															
			Field Molded Sealants and Primer	2.1.2.1														
			Waterstops	2.1.3														
			SD-06 Test Reports															
			Premolded Expansion Joint Filler	2.1.1														
			Strips															
		03201	SD-02 Shop Drawings															
			Fabrication and Placement	3.1														
			SD-06 Test Reports															
			Material															
			Tests, Inspections, and															
			Verifications															

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		03230	SD-02 Shop Drawings																
			Installation Drawings	3.1.2	G	ED													
			SD-03 Product Data																
			Prestressing Method and Equipment	3.1.1	G	ED													
			Materials Disposition Records	3.3															
			Prestressing Operations Records	3.1.8															
			SD-06 Test Reports																
			Stressing Tendons and Accessories	2.1															
			SD-07 Certificates																
			Certification of Prestressing Technicians	1.3															
		03301	SD-02 Shop Drawings																
			Lift Drawings																
			SD-03 Product Data																
			Concrete Mixture Proportioning	2.2	G	ED													
			Batch Plant	3.1.2															
			Concrete Mixers	3.1.3	G	COR													
			Capacity	3.1.1	G	COR													
			Conveying Equipment and Methods		G	COR													
			Placing Equipment and Methods		G	COR													
			Testing Technicians	3.8.1	G	COR													
			Concrete Construction Inspector		G	COR													
			Construction Joint Treatment	3.2.3															

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		03301	Curing and Protection	3.5														
			Hot-Weather Placing	3.3.4														
			Underwater Concrete Methods		G COR													
			and Equipment															
			Dewatering Methods and															
			Equipment															
			Level 1 Quality Control Plan		G COR													
			SD-04 Samples															
			Curing Compound		G COR													
			SD-06 Test Reports															
			Quality of Aggregates															
			Mixer Uniformity	3.8.6														
			Tests and Inspections	3.8														
			SD-07 Certificates															
			Cementitious Materials	2.1.1														
			Fly Ash															
			Impervious-Sheet Curing	2.1.4.1														
			Materials															
			Air-Entraining Admixture															
			Other Chemical Admixtures															
			Membrane-Forming Curing	2.1.4.2														
			Compound															
			Epoxy Resin	2.1.8														
			Latex Bonding Compound	2.1.7														
			Nonshrink Grout	2.1.6														
		03415	SD-02 Shop Drawings															

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		03415	Erection	3.10	G	ED												
			SD-03 Product Data															
			Erection Plan	3.10.5	G	ED												
			Design Calculations	1.3.1.3	G	ED												
			Concrete Mixture Proportions	2.2	G	ED												
			Construction Records	3.11														
			SD-06 Test Reports															
			Materials	2.1														
			Concrete	1.3.2.2														
			SD-07 Certificates															
			Cement	2.1.1														
			Pozzolan	2.1.2														
			Air-Entraining Admixture															
			Aggregates	2.1.3.1														
			Air Content	1.3.2.3														
		04200	SD-02 Shop Drawings															
			Masonry Work	1.4														
			SD-03 Product Data															
			Concrete Masonry Units															
			SD-04 Samples															
			Concrete Masonry Units (CMU)	2.2														
			Anchors, Ties, and Bar	2.6														
			Positioners															
			Expansion-Joint Materials	2.10														
			Joint Reinforcement	2.7														
			SD-06 Test Reports															

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		04200	Field Testing of Mortar	3.15.1														
			Field Testing of Grout	3.15.2														
			Prism tests	3.15.3														
			Masonry Cement	2.4														
			Special Inspection	1.4														
			SD-07 Certificates															
			Concrete Masonry Units (CMU)	2.2														
			Control Joint Keys	2.9														
			Anchors, Ties, and Bar	2.6														
			Positioners															
			Expansion-Joint Materials	2.10														
			Joint Reinforcement	2.7														
			Reinforcing Steel Bars and Rods	2.8														
			Masonry Cement	2.4														
		05055	SD-02 Shop Drawings															
			Detail Drawings	1.3	G	ED												
			SD-03 Product Data															
			Welding of Structural Steel	2.2.2.1	G	ED												
			Welding of Aluminum	2.2.2.4	G	ED												
			Structural Steel Welding Repairs	2.3.4	G	ED												
			Materials Orders	2.1.1														
			Materials List	2.1.2														
			Shipping Bill	2.1.3														
			SD-06 Test Reports															
			Tests, Inspections, and	2.3														
			Verifications															

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		05055	SD-07 Certificates															
			Qualification of Welders and	1.4														
			Welding Operators															
			Application Qualification for Steel	2.2.2.5	G	ED												
			Studs															
			Welding of Aluminum	2.2.2.4														
		05500	SD-02 Shop Drawings															
			Miscellaneous Metal Items	1.6	G	ED												
		05502	SD-02 Shop Drawings															
			Shop Fabricated Metal Items	2.2	G	ED												
			SD-03 Product Data															
			Miscellaneous Metals and	2.1	G	ED												
			Standard Metal Articles															
			Shop Fabricated Metal Items	2.2	G	ED												
			SD-06 Test Reports															
			Miscellaneous Metals and	2.1														
			Standard Metal Articles															
			Shop Fabricated Metal Items	2.2														
		05615	SD-02 Shop Drawings															
			Detail Drawings	2.3.1	G	ED												
			SD-03 Product Data															
			Welding	2.3.3														
			Materials	2.1														
			Materials Disposition Records															
			SD-06 Test Reports															

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		05615	Tests, Inspections, and	2.4														
			Verifications															
		06410	SD-02 Shop Drawings															
			Shop Drawings	1.7	G	ED												
			Installation	3.1	G	ED												
			SD-03 Product Data															
			Wood Materials	2.1	G	ED												
			SD-04 Samples															
			Plastic Laminates	2.2	G	ED												
			Cabinet Hardware	2.4	G	ED												
			SD-07 Certificates															
			Quality Assurance	1.4	G	ED												
			Laminate Clad Casework	3.1	G	ED												
		07220	SD-03 Product Data															
			Application of Insulation	3.6	G	ED												
			Inspection	3.7	G	ED												
			SD-07 Certificates															
			Insulation	2.2	G	ED												
		07551	SD-03 Product Data															
			EVT and Flash Point	3.6	G	ED												
			Materials	3.15	G	ED												
			Installation	3.9	G	ED												
			SD-06 Test Reports															
			Test		G	ED												
			SD-07 Certificates															
			Manufacturer	1.2	G	ED												

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		07551	Materials	3.15	G ED													
		07600	SD-02 Shop Drawings															
			Materials	2.1	G ED													
		07920	SD-03 Product Data															
			Sealants	2.1														
			Primers	2.2														
			Bond breakers	2.3														
			Backstops	2.4														
		08110	SD-02 Shop Drawings															
			Doors	2.1	G ED													
			Frames	2.3	G ED													
			Accessories															
			Weatherstripping	2.4														
			SD-03 Product Data															
			Doors	2.1	G ED													
			Frames	2.3	G ED													
			Accessories															
			Certified Test Data		G ED													
			SD-04 Samples															
			Factory-applied enamel finish		G ED													
		08330	SD-02 Shop Drawings															
			Overhead Rolling Door Unit		G ED													
			SD-03 Product Data															
			Overhead Rolling Door Unit		G ED													
			SD-06 Test Reports															
			Tests		G ED													

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		08330	SD-04 Samples														
			Overhead Rolling Door Unit		G ED												
			SD-10 Operation and Maintenance														
			Data														
			Operation Manual		G ED												
			Maintenance and Repair Manual		G ED												
		08710	SD-02 Shop Drawings														
			Hardware schedule	1.3	G ED												
			Keying system	2.3.4													
			SD-03 Product Data														
			Hardware items	2.3	G ED												
			SD-08 Manufacturer's Instructions														
			Installation	3.1													
			SD-10 Operation and Maintenance														
			Data														
			Hardware Schedule	1.3	G ED												
			SD-11 Closeout Submittals														
			Key bitting	1.4													
		08810	SD-02 Shop Drawings														
			Installation	3.2	G ED												
			SD-03 Product Data														
			Insulating Glass		G ED												
			Glazing Accessories	2.4	G ED												
			Plastic Glazing		G ED												
			SD-07 Certificates														
			Insulating Glass		G ED												

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		09100	SD-03 Product Data														
			Metal support systems	2.1	G ED												
		09225	SD-02 Shop Drawings														
			Lathing and Stucco		G ED												
			SD-03 Product Data														
			Materials	1.3	G ED												
			SD-04 Samples														
			Textured Stucco Finish Coat		G ED												
		09250	SD-03 Product Data														
			Water-Resistant Gypsum Backing	2.1.2													
			Board														
			Accessories	2.1.5													
			SD-07 Certificates														
			Asbestos Free Materials	2.1	G ED												
		09310	SD-03 Product Data														
			Tile	2.1	G ED												
			Setting-Bed		G ED												
			Mortar, Grout, and Adhesive	2.3	G ED												
			SD-04 Samples														
			Tile	2.1	G ED												
		09510	SD-03 Product Data														
			Acoustical Ceiling Systems		G ED												
			SD-04 Samples														
			Acoustical Units	2.1	G ED												
		09900	SD-02 Shop Drawings														
			Piping identification	3.8													

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		09900	stencil	3.8														
			SD-03 Product Data															
			Coating	2.1	G	ED												
			Manufacturer's Technical Data	2.1														
			Sheets															
			Manufactured labels for piping															
			indentification															
			Piping Legend															
			Valve Identification List															
			SD-04 Samples															
			Color	1.8	G	ED												
			SD-07 Certificates															
			Applicator's qualifications	1.3														
			Qualification Testing		G	ED												
			SD-08 Manufacturer’s Instructions															
			Application instructions															
			Mixing	3.5.2														
			Manufacturer's Material Safety	1.6.2														
			Data Sheets															
			SD-10 Operation and Maintenance															
			Data															
			Coatings:	2.1	G	ED												
		09915	SD-04 Samples															
			Color Schedule	2.2	G	ED												
		09965	SD-03 Product Data															
			Inspections and Operations		G	ED												

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		09965	Qualifications	1.4	G	ED												
			Safety and Health Provisions	1.6	G	SO												
			Ventilation	1.6.6.1	G	SO												
			Respirators	1.6.7.1	G	SO												
			Airborne Sampling Plan		G	SO												
			Paint Application	1.6.6	G	SO												
			Medical Status	1.7	G													
			SD-04 Samples															
			Special Paint Formulas	2.1	G	ED												
		10201	SD-02 Shop Drawings															
			Wall louvers	2.2	G	ED												
			SD-06 Test Reports															
			Test Data and Certification															
		10716	SD-02 Shop Drawings															
			Roll shutters	2.2.1														
			SD-03 Product Data															
			Roll shutters	2.2.1														
			SD-06 Test Reports															
			Test Data															
			SD-10 Operation and Maintenance															
			Data															
			Shutters	2.2	G	ED												
		10800	SD-03 Product Data															
			Finishes	2.1.2	G	ED												
			Accessory Items	2.2	G	ED												
		11150	SD-02 Shop Drawings															

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		11150	Wiring and Schematic Diagrams		G	ED												
			SD-03 Product Data															
			Trash Rake/Rack System		G	ED												
			Spare Parts Data															
			SD-06 Test Reports															
			Electrification System Tests															
			Acceptance Testing															
			SD-07 Certificates															
			Electric Motors															
			Wiring															
			Contact Conductors															
			Controls															
			Overcurrent Protection															
			Grounding															
			Trash Rake/Rack System and Controls															
			Sample Rake System															
			Thermal Monitoring of Motor Components															
			SD-10 Operation and Maintenance Data															
			Operation Manuals		G	ED												
			Maintenance Manuals		G	ED												
		11242	SD-02 Shop Drawings															
			Installation	3.1	G	ED												
			SD-03 Product Data															

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		11242	Chemical Feed System	1.3	G ED												
			Chemical Feed System	1.3	G ED												
			Material Safety Data Sheet														
			Framed Instructions	3.4													
			Auxiliary Equipment and Spare	1.6													
			Parts														
			SD-06 Test Reports														
			Field Testing	3.3													
			SD-07 Certificates														
			Chemicals	2.1													
			SD-10 Operation and Maintenance														
			Data														
			Chemical Feed System	1.3	G ED												
		13100	SD-02 Shop Drawings														
			Drawings		G ED												
			SD-07 Certificates														
			Materials	2.1	G ED												
			Qualifications		G ED												
		13202	SD-02 Shop Drawings														
			Fueling System	3.3.2.1	G ED												
			Monitoring Systems		G ED												
			SD-03 Product Data														
			Fueling System	3.3.2.1	G ED												
			Permitting	1.5.1	G ED												
			Registration	1.5.2													
			Spare Parts Data														

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		13202	Installation	3.1														
			Framed Instructions	3.1.6														
			Experience	1.4.1														
			Welding	1.4.2														
			SD-06 Test Reports															
			Tests	3.2														
			SD-10 Operation and Maintenance															
			Data															
			Operation Manuals		G	ED												
			Maintenance Manuals	3.4	G	ED												
		13702	SD-02 Shop Drawings															
			IDS components	1.6.1.1	G	ED												
			Overall system schematic	1.6.1.2	G	ED												
			SD-03 Product Data															
			Interior point sensors	2.5.12.1	G	ED												
			Interior volumetric (space)	2.5.12.2	G	ED												
			sensors															
			Keypad	2.4.14.2	G	EDO												
			cables	3.1.7	G	ED												
			Communications interface	2.5.13	G	ED												
			devices															
			Siren	2.5.15	G	ED												
			Batteries	2.4.5.2	G	ED												
			Tamper switches	2.4.4.2	G	ED												
			Tamper switches	3.1.4	G	ED												
			SD-06 Test Reports															

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		13702	IDS operational test	3.2.1	G	ED												
			final test	3.2.2.2	G	ED												
			SD-07 Certificates															
			IDS operational test plan	1.6.3	G	ED												
			Installer's qualifications	1.6.2.1	G	ED												
			Instructor's qualifications	1.6.2.2	G	ED												
			Year 2000 (Y2K) Compliance	1.7.1	G	ED												
			Warranty															
			IDS equipment	1.6.4	G	ED												
			SD-10 Operation and Maintenance															
			Data															
			IDS	2.2	G	ED												
			SD-11 Closeout Submittals															
			Posted operating instructions	3.2.2.5	G	ED												
		13850	SD-02 Shop Drawings															
			Fire Alarm Reporting System	1.4.1	G	ED												
			SD-03 Product Data															
			Storage Batteries	2.2	G	ED												
			Voltage Drop		G	ED												
			Spare Parts	2.7.3	G	ED												
			Technical Data and Computer	1.5	G	ED												
			Software															
			Training	3.5	G	ED												
			Testing	3.4	G	ED												
			SD-06 Test Reports															
			Testing	3.4	G	ED												

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		13850	SD-07 Certificates															
			Equipment		G	ED												
			Qualifications	1.3.7	G	ED												
			SD-10 Operation and Maintenance															
			Data															
			Technical Data and Computer	1.5	G	ED												
			Software															
		14602	SD-02 Shop Drawings															
			Wiring and Schematic Diagrams		G	ED												
			SD-03 Product Data															
			Hoist Hook Assembly	2.2.2	G	ED												
			Heat Treatment															
			Bridge Crane System		G	ED												
			Hoist	2.1	G	ED												
			Spare Parts															
			SD-06 Test Reports															
			Electrification System Tests	3.2														
			Acceptance Testing	3.3														
			SD-07 Certificates															
			Hoist	2.1														
			Hoist	2.1														
			Track Design															
			Hoist controls	2.1.1														
			Hoist controls	2.1.1														
			Motor Controller	2.7.2														
			Electric Hoists															

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		14602	Trolleys	2.3														
			Wiring	2.7														
			Contact Conductors	2.7.1.1														
			Overcurrent Protection	2.7														
			Grounding	2.7														
			SD-10 Operation and Maintenance															
			Data															
			Operation Manuals		G	ED												
			Maintenance Manuals		G	ED												
		15005	SD-02 Shop Drawings															
			Speed Reducers	1.4.1	G	ED												
			Lubrication System	2.8	G	ED												
			Instrumentation	2.9	G	ED												
			SD-03 Product Data															
			System Description	1.4	G	ED												
			Bearings	2.2	G	ED												
			Gears	2.3	G	ED												
			Shafts	2.4	G	ED												
			Universal JointsED															
			Backstop	2.6	G	ED												
			Housing	2.7	G	ED												
			Lubrication System	2.8	G	ED												
			Instrumentation	2.9	G	ED												
			Speed Reducers	1.4.1	G	ED												
			Lubricant	2.8.7	G	ED												
			SD-06 Test Reports															

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		15005	Shop Testing	3.1.1													
			Field Testing	3.1.3													
			SD-10 Operation and Maintenance														
			Data														
			Operation and Maintenance		G ED												
			Manual														
		15131	SD-02 Shop Drawings														
			Drawings		G ED												
			SD-03 Product Data														
			Materials	2.1	G ED												
			Materials	2.1	G ED												
			Spare Parts	2.13													
			Total Head		G ED												
			Shipping Bills	1.4.1													
			Dynamic Analysis	2.6.1	G ED												
			Dynamic Analysis	2.6.1.1	G ED												
			Pump Frame Anchor Bolt Design		G ED												
			Pump Base Plate Design		G ED												
			Installation and Erection	3.1													
			Instructions Manual														
			Instructions and Procedures														
			SD-04 Samples														
			Materials	2.1	G ED												
			SD-06 Test Reports														
			Witness Test	2.6.2.7													
			Factory Test	2.6.2													

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		15131	Welding Procedures and															
			Qualifications															
			Examination of Castings															
			SD-10 Operation and Maintenance															
			Data															
			Operation and Maintenance		G	ED												
			Instructions Manual															
		15133	SD-02 Shop Drawings															
			Layout and Shop Drawings		G	ED												
			Installation	3.1	G	ED												
			As-Built Drawings		G	ED												
			SD-03 Product Data															
			Diesel Engine	2.2	G	ED												
			Cooling System	2.5	G	ED												
			Dynamic Analysis of Engine,		G	ED												
			Pump, and Governor															
			Project/Site Conditions	1.7														
			On-Site Training	3.5.1														
			Manufacturer's Published	3.4.3.3														
			Instructions															
			Field Engineer	3.5.2														
			Diesel Engine Pump Drive		G	ED												
			Welder Qualifications	1.4														
			Installation	3.1														
			SD-06 Test Reports															
			Engine	2.2														

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		15133	SD-07 Certificates																
			Pressure Vessels																
			Regulatory Requirements	1.5															
			Air General Permit	1.5.2															
			SD-10 Operation and Maintenance																
			Data																
			Diesel Engine	2.2	G	ED													
		15400	SD-02 Shop Drawings																
			Plumbing System	3.8.1	G	ED													
			Electrical Schematics		G	ED													
			SD-03 Product Data																
			Welding	1.3.1															
			Plumbing Fixture Schedule	3.9															
			SD-06 Test Reports																
			Tests, Flushing and Disinfection	3.8															
			Backflow Prevention Assembly																
			Tests																
			SD-07 Certificates																
			Materials and Equipment																
			SD-10 Operation and Maintenance																
			Data																
			Plumbing System	3.8.1	G	ED													
		15653	SD-02 Shop Drawings																
			Air-Conditioning System		G	ED													
			SD-03 Product Data																
			Air-Conditioning System		G	ED													

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		15653	Spare Parts Data															
			SD-06 Test Reports															
			Tests	3.2														
			System Performance Tests	3.2.2														
			SD-07 Certificates															
			Air-Conditioning System															
			Service Organizations															
			SD-10 Operation and Maintenance															
			Data															
			Operation Manual		G	ED												
			Maintenance Manuals		G	ED												
		15895	SD-02 Shop Drawings															
			Drawings	3.1.1	G	ED												
			Installation	3.1	G	ED												
			SD-03 Product Data															
			Components and Equipment	2.1	G	ED												
			Test Procedures															
			System Diagrams		G	ED												
			Test Schedules															
			Field Training Schedule															
			SD-06 Test Reports															
			Test Reports															
			SD-10 Operation and Maintenance															
			Data															
			Air Supply, Distribution,		G	ED												
			Ventilation, and Exhaust Manuals															

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		16120	SD-03 Product Data															
			Installation Instructions	2.3	G	ED												
			SD-06 Test Reports															
			Tests, Inspections, and	2.4	G	ED												
			Verifications															
		16221	SD-02 Shop Drawings															
			Motors		G	ED												
			SD-03 Product Data															
			Insulated Windings	2.1.5	G	ED												
			Duty Cycle		G	ED												
			Motor Design Curves		G	ED												
			Motors		G	ED												
			Government Study Design Data		G	ED												
			Spare Parts List															
			SD-07 Certificates															
			Power Factor and Efficiency		G	ED												
			Factory Tests	3.1	G	ED												
			SD-09 Manufacturer's Field															
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			Starting Capabilities		G	ED												
			Factory Tests	3.1	G	ED												
			SD-10 Operation and Maintenance															
			Data															
			Instruction Manuals		G	ED												
		16264	SD-02 Shop Drawings															
			Layout and Shop Drawings		G	ED												

SUBMITTAL REGISTER

CONTRACT NO.

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CONTRACTOR

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		16264	As-Built Drawings		G	ED												
			SD-03 Product Data															
			Equipment Performance		G	ED												
			Sound Power Level		G	ED												
			Generator Data		G	ED												
			Power Factor Capability Curve		G	ED												
			Heat Rejected to		G	ED												
			Engine-Generator Space															
			Alarm Setpoints		G	ED												
			Cooling Equipment and		G	ED												
			Performance															
			Manufacturer's Catalog Data		G	ED												
			Vibration-Isolation															
			Posted Data		G	ED												
			Instructions		G	ED												
			Component Manufacturer															
			Manufacturer/Assembler															
			Field Engineer															
			Welder Qualification															
			Installation Procedures															
			SD-06 Test Reports															
			Onsite Test		G	ED												
			SD-07 Certificates															
			Torsional Vibration															
			Prototype Tests															
			Reliability and Durability															

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		16264	Emissions															
			Sound limitation															
			Flywheel Balance															
			Standards Compliance															
			Factory Tests															
			Functional Facilities															
			Cooling System															
		16403	SD-02 Shop Drawings															
			Outline Drawings		G	ED												
			Motor Controllers		G	ED												
			SD-03 Product Data															
			Equipment		G	ED												
			Factory Tests	2.16	G	ED												
			SD-06 Test Reports															
			Factory Tests	2.16	G	ED												
			SD-07 Certificates															
			Motor Controllers		G	ED												
		16410	SD-01 Preconstruction Submittals															
			Material, Equipment, and Fixture		G	ED												
			Lists															
			SD-04 Samples															
			Switches		G	ED												
			Equipment	1.2.1	G	ED												
			SD-06 Test Reports															
			Tests		G	ED												
			SD-07 Certificates															

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		16410	Equipment and Materials		G ED													
			Switching Equipment		G ED													
			SD-10 Operation and Maintenance															
			Data															
			Switching Equipment		G ED													
		16415	SD-02 Shop Drawings															
			Interior Electrical Equipment		G ED													
			SD-03 Product Data															
			Manufacturer's Catalog		G ED													
			Material, Equipment, and Fixture		G ED													
			Lists															
			Installation Procedures		G ED													
			As-Built Drawings	1.2.6	G ED													
			Onsite Tests	3.22.2	G ED													
			SD-06 Test Reports															
			Factory Test Reports		G ED													
			Field Test Plan		G ED													
			Field Test Reports	3.20	G ED													
			SD-07 Certificates															
			Materials and Equipment	1.4	G ED													
		16450	SD-01 Preconstruction Submittals															
			Tests															
			Demonstrations		G ED													
			SD-02 Shop Drawings															

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		16450	SCS, Water Level Sensing and		G	ED													
			Monitoring System, and																
			Miscellaneous Items																
			Graphic Screens		G	ED													
			SD-03 Product Data																
			SCS, Water Level Sensing and		G	ED													
			Monitoring System, and																
			Miscellaneous Items																
			Spare Parts Data		G	ED													
			SD-07 Certificates																
			Verification of Dimensions																
			Service Organizations		G	ED													
			SD-08 Manufacturer's Instructions																
			Instructions for Water Level																
			Sensing and Monitoring System,																
			SCS, and Other Items																
			SD-09 Manufacturer's Field																
			Reports																
			SCS, Water Level Sensing and		G	ED													
			Monitoring System, and																
			Miscellaneous Items																
			Field Test Reports		G	ED													
			SD-10 Operation and Maintenance																
			Data																
			Operations, Maintenance, and		G	ED													
			Parts Manuals																

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		16710	SD-02 Shop Drawings															
			Premises Distribution System	1.7	G	ED												
			Installation	3.1	G	ED												
			SD-03 Product Data															
			Record Keeping and		G	ED												
			Documentation															
			Manufacturer's Recommendations	3.1.2	G	ED												
			Test Plan	3.6	G	ED												
			Qualifications	1.5	G	ED												
			SD-06 Test Reports															
			Test Reports	3.6	G	ED												
			SD-07 Certificates															
			Premises Distribution System	1.7	G	ED												
			Materials and Equipment	2.1	G	ED												
			Installers	1.5.1	G	ED												

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DIVISION 02 - SITE CONSTRUCTION

SECTION 02331

CANAL EXCAVATION AND LEVEE CONSTRUCTION

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SECTION 02331

CANAL EXCAVATION AND LEVEE CONSTRUCTION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 136	(2001) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 1140	(1997) Amount of Material in Soils Finer Than the No. 200 (75-Micrometer) Sieve
ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(2000) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3))
ASTM D 2216	(1998) Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 2487	(2000) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2922	(1996e1) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1996) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

ENGINEERING MANUALS (EM)

EM 385-1-1	(2004) U.S. Army Corps of Engineers Safety and Health Requirements Manual

FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT)

FDOT	(2004) Standard Specifications for Road and Bridge Construction

1.2 DEFINITIONS

1.2.1 Clearing

As defined in Section 02230 CLEARING AND GRUBBING.

1.2.2 Grubbing

As defined in Section 02230 CLEARING AND GRUBBING.

1.2.3 Stripping

Stripping shall consist of the removal and satisfactory disposal of crops, weeds, grass, and other vegetative materials to the ground surface, by using a root rake or other device as approved by the Contracting Officer.

1.2.4 Satisfactory Materials

Satisfactory materials shall be the earth and rock materials excavated from the canal prism, crushed, and otherwise processed to conform to FDOT Standard Specification 911 for Limerock Base. After excavated canal material has been used, scraped material shall be used for levee construction on the STA levees, and will be considered satisfactory. Scraped materials are classified as earthen material created by rock plowing of surficial soils.

1.2.5 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials also include man-made fills; trash; refuse; backfills from previous construction; and material classified as satisfactory which contains root and other organic matter. The Contracting Officer shall be notified of any contaminated materials.

1.2.6 Embankment

The terms "levee" or "embankment" as used in these specifications are defined as the earth fill portions of the levee structure or other fills related to the levee structure.

1.2.7 Classification of Soils

Materials used to construct the embankments and for backfills shall be classified in accordance with ASTM D 2487 (Unified Soil Classification System).

1.2.7.1 Cohesionless and Cohesive Materials

Cohesionless materials shall include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

1.2.8 Degree of Compaction

Degree of compaction required is expressed as a percentage of the maximum dry density obtained by the test procedure presented in ASTM D 1557 abbreviated as a percent of laboratory maximum dry density.

1.3 CLASSIFICATION OF EXCAVATION

Excavation specified shall be done on a classified basis, in accordance with the following designations and classifications.

1.3.1 Rock Excavation

Rock excavation shall include drilling, blasting, excavating, grading, and processing of material classified as rock and shall include the satisfactory removal of material which cannot be removed without systematic drilling and blasting. If at any time during excavation, the Contractor encounters material that may be classified as rock excavation, such material shall be uncovered by the Contractor at no additional cost to the Government, and the Contracting Officer notified by the Contractor. The Contractor shall not proceed with the excavation of this material until the Contracting Officer has classified the materials as common excavation or rock excavation, and has taken cross sections as required. Failure on the part of the Contractor to uncover such material, notify the Contracting Officer, and allow ample time for classification and cross sectioning of the undisturbed surface of such material will cause the forfeiture of the Contractor's right of claim to any classification or volume of material to be paid for other than that allowed by the Contracting Officer for area of work in which such deposits occur. The Contractor shall review the available geotechnical data and determine the limits of rock excavation.

1.3.2 Common Excavation

Common excavation shall include the satisfactory removal and disposal of all materials not classified as rock excavation. The Contractor shall assume that common excavation will require ripping at a minimum. Ripping shall be performed using a D-8 dozer or equivalent with single or multiple ripping teeth as a minimum.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Earthwork; G|EN

Submit procedure and location for disposal of unused satisfactory material, blasting plan when blasting is permitted, and proposed source of borrow material.

Excavation; G|COR

Submit a written excavation plan 2 days prior to the beginning of any excavation. Approval of the detailed plan shall be obtained from the Contracting Officer prior to starting the work. If necessary, the plan shall be modified as required to meet field conditions, and the modifications shall be approved prior to use. As a minimum, the plan shall contain, the following:

a. Proposed methods for preventing interference with, or damage to, existing underground or overhead utility lines, trees designated to remain and other man-made facilities or natural features designated to remain within or adjacent to the construction rights-of-way.

b. Provision for coordinating the work with other Contractors working in the construction rights-of-way or on facilities crossing or adjacent to this work.

c. A complete listing of equipment used for excavation and to transport the excavated material.

d. The Contractor's proposed road pattern, and plan for implementing dust control measures.

Plan of Operations; G|COR

Thirty (30) days prior to commencement of haul road construction or placing embankment and fill which ever is earlier, the contractor shall submit for approval a Plan of Operations for accomplishing all embankment and backfill construction and for the location and construction of haul roads. This plan shall include but not be limited to the Contractor's proposed sequence of construction for embankment and backfill items, and methods and types of equipment to be utilized for all embankment and backfill operations, including transporting, placing, and compaction. This plan shall also include the names and addresses of the commercial testing labs which will perform the soil testing and inspection and describe how all required soils testing will be performed.

Nuclear Density; G|COR

Nuclear density testing equipment shall be used in accordance with ASTM D 2922 and ASTM D 3017. In addition, the following condition shall apply:

a. Prior to using the nuclear density testing equipment on the site, the Contractor shall submit to the Contracting Officer a certification that the operator has completed a training course approved by the nuclear density testing equipment manufacturer, the most recent data sheet from the manufacturer's calibration, and a copy of the most recent statistical check of the standard count precision.

b. The nuclear density testing equipment shall be capable of extending a probe a minimum of 8 inches down into a hole.

SD-06 Test Reports

Testing; G|EN

Within 24 hours of conclusion of all physical tests, submit 3 copies of test results, including calibration curves and results of calibration tests.

Nuclear Density Test Report; G|ED

Submit a copy of the report including the results of all daily nuclear density tests, and water contents obtained from these tests, on the next work day following the test.

Measurement of Fill Material; G|COR

Submit a copy of the records of each compliance survey the next work day following the survey.

SD-07 Certificates

Testing; G|EN

Qualifications of the commercial testing laboratory or Contractor's testing facilities.

1.5 SYSTEM DESCRIPTION

The work covered by this section consists of furnishing all equipment, labor, materials, and incidentals, and performing all operations necessary for the clearing, grubbing, and stripping of the areas specified herein or indicated on the drawings, and for the removal and disposal of cleared, grubbed, and stripped materials, and refilling of holes resulting from grubbing; all excavations, as specified and shown; foundation preparation and the construction of levee embankments, including new levee, berms, road crossings, and other incidental earthwork as may be necessary to complete the levee as specified herein and as shown on the drawings. All work under this section shall comply with the requirements of EM 385-1-1.

1.6 BLASTING

Blasting shall be performed as specified in Section 02222 BLASTING.

1.7 GENERAL CONDITIONS

1.7.1 Lines and Grades

Excavation, embankment and fill shall be constructed to the lines, grades, and cross sections indicated on the drawings, unless otherwise directed by the Contracting Officer. The Government reserves the right to increase or decrease the foundation widths and embankment slopes or to make such other changes in the excavation, embankment or fill sections as may be deemed necessary to produce a safe structure. Changes in quantities resulting from such revisions will not constitute justification for change in contract unit prices, except as provided for in the Variations in Estimated Quantities Clause. Increases in height of section, made to compensate for settlement or consolidation of the embankment material subsequent to the completion of the embankment, will not exceed 10 percent of the height above the foundation at the levee centerline indicated. The end slopes and side slopes of partial fill sections shall not be steeper than one vertical on three horizontal, unless otherwise shown on the drawings.

1.7.2 Conduct of the Work

The Contractor shall maintain and protect the excavation, embankment and fill in a satisfactory condition at all times until final completion and acceptance of all work under the Contract. If, in the opinion of the Contracting Officer, the hauling equipment causes horizontal shear planes or slicken sides, rutting, quaking, heaving, cracking, or excessive deformation of the embankment or fill, the Contractor shall limit the type, load, or travel speed of the hauling equipment on the embankment or fill. The Contractor may be required to remove, at his own expense, any embankment material placed outside of prescribed slope lines. Any approved embankment or fill material which is lost in transit or rendered unsuitable after being placed in the embankment or fill and before final acceptance of

the work shall be replaced by the Contractor in a satisfactory manner and no additional payment will be made therefor. The Contractor shall excavate and remove from the embankment or fill any material which is unsatisfactory and shall also dispose of such material and refill the excavated area as directed, all at no cost to the Government.

1.7.3 Utilization of Excavated Materials

Unsatisfactory excavated materials shall be disposed of in designated waste disposal or spoil areas. Satisfactory material removed from excavations shall be used, insofar as practicable, in the construction of fills, embankments, subgrades, shoulders, bedding (as backfill), and for similar purposes. Surplus satisfactory excavated material not required for fill shall be disposed of in areas approved for surplus material storage. Newly designated waste areas on Government-controlled land shall be cleared and grubbed before disposal of waste material thereon. No excavated material shall be disposed of to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

1.7.4 Haul Roads

Haul roads shall be located and constructed as approved by the Contracting Officer within the project boundaries shown on the drawings. Prior to the commencement of construction the contractor shall submit for approval a site plan detailing the location of all haul roads within the project limits. Haul roads shall be constructed to maintain the intended traffic, be free draining, and be maintained in good condition throughout the contract period. Any haul road which crosses any creek or drainage channel shall be constructed, and maintained by the Contractor so as to not flood either upstream areas by restricting stream flows or flood downstream areas by the release of any stored water in the event that the crossing fails for any cause. Haul roads constructed during the contract duration shall be removed after work is completed and the impacted area restored to its preconstruction conditions. All haul roads within the right-of-way that will remain as public thoroughfares after construction shall be cleaned daily and maintained in the preconstruction condition. All costs associated with these haul roads shall be considered as a subsidiary obligation of the Contractor.

1.7.5. Drainage

The Contractor shall not block or restrict the flow in a natural drain, existing culvert, ditch or channel at any time without obtaining prior written approval from the Contracting Officer. This approval shall not relieve the Contractor from responsibility for any damage caused by his operation. Surface water shall be directed away from excavations and construction sites so as to prevent erosion and undermining of foundations. Diversion ditches, dikes, and grading shall be provided and maintained as necessary during construction. Excavated slopes and fill surfaces shall be protected to prevent erosion and sloughing. Excavation shall be performed so that the site and the area immediately surrounding the site and affecting operations at the site shall be continually and effectively drained.

1.8 PERMITS

In accordance with clause PERMITS AND RESPONSIBILITIES of Section 00700 CONTRACT CLAUSES, the Contractor shall obtain all necessary permits

required for disposal, hauling, erosion control, burning, and pay all fees associated with permitting and compliance.

1.9 PROJECT SITE CONDITIONS

1.9.1 Protection of Cultural and Natural Resources

All work and Contractor operations shall comply with the requirements of Section 01355 ENVIRONMENTAL PROTECTION and with the requirements of this section.

1.9.2 Protection of Existing Man-Made Facilities and Natural Features

Trees within the clearing area shall be felled in such a manner as to avoid damage to trees left standing and trees outside the clearing area, existing buildings, man-made facilities and natural features, with due regard to the safety of employees and others, and in compliance with EM 385-1-1. Excavation shall be conducted in such a manner as to avoid damage to trees left standing and trees outside the clearing and excavation area, existing buildings, man-made facilities and natural features, with due regard to the safety of employees and others, and in compliance with EM 385-1-1. Existing utility lines that are shown on the drawings or the locations of which are made known to the Contractor prior to excavation and that are to be retained shall be protected from damage during excavation. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the applicable utility companies in sufficient time for measures to be taken to prevent interruption of the services.

1.9.3 Historical, Archeological, and Cultural Resources

Historical, archeological, and cultural resources within the Contractor's work limits may exist. If, during construction activities, the Contractor observes items that may have historical or archeological value, such observations shall be reported immediately to the Contracting Officer so that appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on or otherwise damaging such resources.

1.9.4 Subsurface Data

Subsurface soil boring logs are included in these specifications. Subsurface investigation reports may be examined at the Jacksonville District Office. These data represent subsurface information at the boring locations; however, variations may exist in the subsurface between boring locations. Groundwater levels indicated on the soil boring logs were levels found at the time of exploration. The groundwater table can vary significantly depending on time of year, variation from normal precipitation, and river stage or tide level.

1.10 SEQUENCE OF WORK

1.10.1 Clearing and Grubbing

All clearing and grubbing work shall be completed at least 300 feet in advance of excavation and embankment construction. If regrowth of vegetation or trees occurs after clearing and grubbing and before placement of embankment, the Contractor shall clear and grub again prior to

embankment construction.

1.10.2 Stripping

After inspection and acceptance of cleared and grubbed areas, stripping may proceed. All stripping work shall be completed not more than 300 feet in advance of excavation and embankment construction.

PART 2 PRODUCTS

2.1 TYPES OF FILL MATERIALS

2.1.1 Select Fill

The select fill material shall consist of satisfactory materials.

PART 3 EXECUTION

3.1 CLEARING

Clearing shall be accomplished within the entire construction easement limits. Trees, downed timber, snags, slash, brush, garbage, trash, debris, fencing and other items shall be cleared flush with the existing ground surface. Trees and vegetation designated to be left standing or to remain shall be protected from damage from construction operations.

3.2 GRUBBING

Grubbing shall be accomplished within the entire construction easement limits. Grubbing shall be accomplished to a depth of at least one foot below the existing ground surface.

3.2.1 Filling of Holes

All holes caused by grubbing operations and removal of pipes and drains, excluding holes in borrow areas, channels and ditches shall be filled with satisfactory material. This material shall be placed in 12-inch layers to the elevation of the adjacent ground surface, and each layer compacted to a density at least equal to 90 percent of the maximum dry density of the material in accordance with ASTM D 1557.

3.3 STRIPPING

The entire area within the construction easement limits shall be stripped to the ground surface.

3.4 DISPOSITION OF CLEARED, GRUBBED, AND STRIPPED MATERIAL

Except as otherwise specified or indicated on the drawings, all materials resulting from clearing and grubbing operations shall, at the Contractor's option, be disposed of either by burning, removal from the site, or a combination thereof. In no case shall any material resulting from clearing and grubbing operations be buried or permanently placed within the levee foundation or any structural foundation. The Contractor shall make a reasonable effort to channel merchantable material into the commercial market and to make beneficial use of the materials resulting from clearing and grubbing.

3.4.1 Burning

Subject to applicable Federal, State and local burning restrictions, the Contractor may burn material within the contract rights-of-way. Burning operations shall be conducted so as to prevent damage to adjacent man-made facilities and natural features. The Contractor shall be responsible for any damage to life and property resulting from fires that are started by the Contractor's employees or as a result of the Contractor's operations. The Contractor shall furnish, at the site of burning operations, adequate fire fighting equipment to properly equip personnel for fighting fires. Fires shall be guarded at all times and shall be under constant surveillance until they have been extinguished. All unburned material (material not reduced to ash) shall be removed from the site.

3.4.2 Removal from Site of Work

The Contractor may elect to remove all or part of the cleared and grubbed materials from the site of the work in accordance with Section 01355 ENVIRONMENTAL PROTECTION. The Contractor shall, at his option, either retain any such materials of value for his own use or dispose of them by sale or otherwise. The Government is not responsible for the protection and safekeeping of any materials retained by the Contractor. Such materials shall be removed from the site of the work before the date of completion of the work.

3.5 GENERAL EXCAVATION

Perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Grading shall be in conformity with the typical sections shown and the tolerances specified in paragraph FINISHING. Satisfactory excavated materials shall be transported to and placed in fill or embankment within the limits of the work. Unsatisfactory materials encountered within the limits of the work shall be excavated below grade. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times.

3.6 PREPARATION OF FOUNDATION AND PARTIAL FILL SURFACES

After stripping, the sides of stump holes, test pits, and other similar cavities or depressions shall be broken down so as to flatten out the slopes, and the sides of the cut or hole shall be scarified to provide bond between the foundation material and the fill. Unless otherwise directed, each depression shall be filled with the same material type that is to be placed immediately above the foundation. The fill shall be placed in layers, moistened, and compacted in accordance with the applicable provisions of paragraphs PLACEMENT, MOISTURE CONTROL, and COMPACTION. Materials which cannot be compacted by roller equipment because of inadequate clearances shall be compacted with power tampers in accordance with the paragraph COMPACTION for the specific material type. After filling of depressions and immediately prior to placement of compacted fill in any section of the embankment, the foundation of such section shall be loosened thoroughly by scarifying, plowing, discing or harrowing to a minimum depth of 6 inches, and the moisture content shall be adjusted to the amount specified in paragraph MOISTURE CONTROL for the appropriate type of material. Immediately prior to placement of compacted fill on or against the surfaces of any partial fill section, all soft or loose material, all material containing cracks or gullies, and all material that does not conform with the specified zoning of the embankment shall be

removed. The remaining surface of the partial fill shall be loosened by scarifying, plowing, discing or harrowing to a minimum depth of 6 inches, and the moisture content shall be adjusted as specified in paragraph MOISTURE CONTROL for the appropriate type of material. The surface of the partial fill section upon which fill is to be placed shall then be compacted. No separate payment will be made for loosening and rolling the foundation area, the abutment area, or the surfaces of partial fill sections, but the entire cost thereof shall be included in the applicable contract price for fill.

3.7 EMBANKMENTS

Embankments shall be constructed from satisfactory materials. The material shall be placed in successive horizontal layers of loose material not more than 12 inches in depth. Each layer shall be spread uniformly on a surface that has been moistened or aerated as necessary, and scarified or otherwise broken up so that the fill will bond with the surface on which it is placed. After spreading, each layer shall be plowed, disked, or otherwise broken up; moistened or aerated as necessary; thoroughly mixed; and compacted to at least 95 percent laboratory maximum dry density. Compaction requirements for the upper portion of earth embankments forming subgrade for pavements shall be identical with those requirements specified in paragraph SUBGRADE PREPARATION. Compaction shall be accomplished by using approved equipment which is suitable for the character of fill used.

3.8 SUBGRADE PREPARATION

3.8.1 Construction

Subgrade shall be shaped to line, grade, and cross section, and compacted as specified. This operation shall include plowing, disking, and any moistening or aerating required to obtain specified compaction. Soft or otherwise unsatisfactory material shall be removed and replaced with satisfactory excavated material or other approved material as directed. Rock encountered in the cut section shall be excavated to a depth of 6 inches below finished grade for the subgrade. Low areas resulting from removal of unsatisfactory material or excavation of rock shall be brought up to required grade with satisfactory materials, and the entire subgrade shall be shaped to line, grade, and cross section and compacted as specified. After rolling, the surface of the subgrade for roadways shall not show deviations greater than 1/2 inch when tested with a 12-foot straightedge applied both parallel and at right angles to the centerline of the area. The elevation of the finish subgrade shall not vary more than 5/8 inch from the established grade and cross section.

3.8.2 Compaction

Compaction shall be accomplished by using approved equipment which is suitable for the character of fill used. Except for paved areas, each layer of the subgrade shall be compacted to at least 95 percent of laboratory maximum dry density.

3.8.2.1 Subgrade for Pavements

Subgrade for pavements shall be compacted to at least 95 percent laboratory maximum dry density for the depth below the surface of the pavement shown. When more than one soil classification is present in the subgrade, the top 8 inches of subgrade shall be scarified, windrowed, thoroughly blended, reshaped, and compacted.

3.9 FINISHING

The surface of fills, embankments, and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. The degree of finish for graded areas shall be within 0.1 foot of the grades and elevations indicated except that the degree of finish for subgrades shall be specified in paragraph SUBGRADE PREPARATION. Gutters and ditches shall be finished in a manner that will result in effective drainage. The surface of areas to be turfed shall be finished to a smoothness suitable for the application of turfing materials. A tolerance of zero feet above and 0.5 feet below the prescibed grade will be allowed for rock excavation.

3.10 MOISTURE CONTROL

3.10.1 General

The materials in each layer of the fill shall contain the amount of moisture, within the limits specified below or as directed by the Contracting Officer, necessary to obtain the required compaction. Material that is not within the specified moisture content limits after compaction shall be reworked to obtain the specified moisture content, regardless of density.

3.10.1.1 Insufficient Moisture for Suitable Bond

If the top or contact surfaces of a partial fill section become too dry to permit suitable bond between these surfaces and the additional fill to be placed thereon, loosen the dried materials by scarifying or discing to such depths as may be directed by the Contracting Officer, dampen the loosened material to an acceptable moisture content, and compact this layer in accordance with the applicable requirements of paragraph COMPACTION below.

3.10.1.2 Excessive Moisture for Suitable Bond

If the top or contact surfaces of a partial fill section become too wet to permit suitable bond between these surfaces and the additional fill to be placed thereon, the wet material shall be scarified and permitted to dry, assisted by discing or harrowing, if necessary, to such depths as may be directed by the contracting officer. The material shall be dried to an acceptable moisture content, and shall be compacted in accordance with the applicable requirements of paragraph COMPACTION.

3.10.1.3 Drying Wet Material

Material that is too wet shall be spread on the embankment and permitted to dry, be assisted by discing or harrowing, if necessary, until the moisture content is reduced to an amount within the specified limits.

3.10.1.4 Increasing Moisture in Dry Material

The moisture content of material that is too dry, will be adjusted on the levee embankment. Add water to the fill material and by harrowing, or other approved methods, work the moisture into the material until a uniform distribution of moisture within the specified limits is obtained. Water applied on a layer of fill on the levee embankment shall be accurately controlled in amount so that free water will not appear on the surface during or subsequent to rolling. Should too much water be added to any part

of the embankment, the rolling on that section of the embankment shall be delayed until the moisture content of the materials is reduced to an amount within the specified limits. If it is impracticable to obtain the specified moisture content by wetting or drying the material on the fill, pre-wet or dry back the material.

3.10.2 Fill

The moisture content after compaction shall be within the limits of 2 percentage points above optimum to 2 percentage points below optimum moisture content as determined by ASTM D 1557, except as otherwise noted on the Drawings.

3.11 COMPACTION

After a layer of material has been dumped and spread, it shall be harrowed to break up and blend the fill materials and to obtain uniform moisture distribution. Harrowing shall be performed with a heavy disk plow, or other approved harrow, to the full depth of the layer. If one pass of the harrow does not accomplish the breaking up and blending of the materials, additional passes of the harrow shall be required, but in no case will more than three passes of the harrow on any one layer be required for this purpose. When the moisture content and the condition of the layer are satisfactory, the lift shall be compacted to a minimum of 95 percent of the maximum dry density as determined by the Contractor in accordance with ASTM D 1557. In areas which are not accessible by roller, the fill shall be placed in layers not more than 6 inches in uncompacted depth and compacted with an approved hand operated compactor to a density equal to that obtained in other areas which are accessible to heavy equipment rollers. Dumping, spreading, sprinkling, and compacting may be performed at the same time at different points along a section when there is sufficient area to permit these operations to proceed simultaneously. Compaction equipment shall be operated such that the strip being traversed by the roller shall overlap the rolled adjacent strip by not less than 3 feet.

3.12 FIELD QUALITY CONTROL

3.12.1 Clearing, Grubbing, and Stripping

Establish and maintain quality control for clearing, grubbing, and stripping operations to assure compliance with contract requirements, and maintain records of the quality control for all construction operations including but not limited to the items indicated below. These records, as well as the records of corrective actions taken, shall be furnished to the Government in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

3.12.1.1 Clearing

Station to station limits, transverse clearing limits from applicable centerline; percentage of area complete; types of materials cleared.

3.12.1.2 Grubbing

Station to station limits, transverse grubbing limits from applicable centerline; percentage of area complete; type of material; filling of grubbed holes.

3.12.1.3 Stripping

Station to station limits, transverse stripping limits from applicable centerline; percentage of area complete; type of material.

3.12.2 Embankment

3.12.2.1 General

As a part of the Contractor Quality Control (CQC) system required by SECTION 01451 CONTRACTOR QUALITY CONTROL, establish and maintain field quality control for foundation preparation, embankment and fill operations to assure compliance with contract requirements and maintain detailed records of field quality control for all operations including but not limited to the following:

a. Earthwork Equipment

Type, size, number of units and suitability for construction of the prescribed work.

b. Foundation Preparation

Methods of preparing the foundations in advance of embankment and fill construction and methods for providing drainage of the foundation and partially completed fills.

3.12.2.2 Testing

Testing shall be performed by an approved commercial testing laboratory. If the Contractor elects to establish testing facilities, no work requiring testing will be permitted until the Contractor's facilities have been inspected and approved by the Contracting Officer. Field in-place density shall be determined in accordance with ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using only the sand cone method as described in ASTM D 1556. When using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017; the calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed by the Contracting Officer. When test results indicate, as determined by the Contracting Officer, that compaction is not as specified, the material shall be removed, replaced and recompacted to meet specification requirements. Tests on recompacted areas shall be performed to determine conformance with specification requirements. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

a. Fill and Backfill Material Gradation. One test per 500 cubic yards stockpiled or in-place source material. Gradation of fill and backfill material shall be determined in accordance with ASTM C 136 and ASTM D 1140 as applicable.

b. In-Place Densities.

(1) One test per 3000 square feet, or fraction thereof, of each lift of fill or backfill areas compacted by other than hand-operated machines.

(2) One test per 1000 square feet, or fraction thereof, of each lift of fill or backfill areas compacted by hand-operated machines.

(3) One test per 500 linear feet, or fraction thereof, of each lift of embankment or backfill for roads.

c. Moisture Contents. In the stockpile or excavation, a minimum of two tests per day per type of material or source of material being placed during stable weather conditions shall be performed. During unstable weather, tests shall be made as dictated by local conditions and approved by the Contracting Officer. Perform the tests in accordance with ASTM D 2216. In the placed fill or backfill, perform moisture content tests (following ASTM D 3017) at every density test performend following ASTM D 2922.

d. Optimum Moisture and Laboratory Maximum Density. Tests shall be made for each type material or source of material including borrow material to determine the optimum moisture and laboratory maximum density values. One representative test per 500 cubic yards of fill and backfill, or when any change in material occurs.

e. Tolerance Tests for Subgrades. Continuous checks on the degree of finish specified in paragraph SUBGRADE PREPARATION shall be made during construction of the subgrades.

3.12.2.3 Materials

Suitability of materials for use in embankment and fill.

3.12.2.4 Fill Placement

Layout, maintaining existing drainage, moisture control, thickness of layers, removal of oversized material, spreading and compaction for embankment and fill.

3.12.2.5 Grade and Cross Section

Surveys to verify that the dimensions, slopes, lines and grades conform to those shown on the drawings.

3.12.2.6 Testing by the Government

During the life of this contract, the Government or its contractors will perform quality assurance tests. The contractor shall make available to the government or its contractors the equipment to perform these test.

3.12.2.7 Reporting

On a daily basis, the Contractor shall furnish the inspection records and all material testing results, as well as the records of corrective action taken, in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

3.13 SUBGRADE AND EMBANKMENT PROTECTION

During construction, embankments and excavations shall be kept shaped and drained. Ditches and drains along subgrade shall be maintained to drain effectively at all times. The finished subgrade shall not be disturbed by traffic or other operation and shall be protected and maintained by the Contractor in a satisfactory condition until subbase, base, or pavement is placed. The storage or stockpiling of materials on the finished subgrade will not be permitted. No subbase, base course, or pavement shall be laid until the subgrade has been checked and approved, and in no case shall subbase, base, surfacing, or pavement be placed on a muddy or spongy, subgrade.

3.14 MAINTENANCE OF WORK

3.14.1 Debris Removal

Maintain all ditch and channel excavations free from leaves, brush, sticks, trash, and other debris until final acceptance of all work under the contract at no additional cost to the Government.

3.14.2 Sediment Removal

Prior to final acceptance of all work under this contract, the removal of sediments from ditch or channel excavations shall be required to restore design grade and section at no additional cost to the Government.

-- End of Section --

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DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13100

LIGHTNING PROTECTION SYSTEM

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SECTION 13100

LIGHTNING PROTECTION SYSTEM

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2002) National Electrical Code
NFPA 780	(2000) Installation of Lightning Protection Systems

UNDERWRITERS LABORATORIES (UL)

UL 96	(1994; R 2000, Bul. 2003) Lightning Protection Components
UL 96A	(2001; Bul. 2003) Installation Requirements for Lightning Protection Systems
UL 467	(1993; Rev thru Feb 2001) Grounding and Bonding Equipment
UL Elec Const Dir	(2001) Electrical Construction Equipment Directory

1.2 GENERAL REQUIREMENTS

1.2.1 Verification of Dimensions

The Contractor shall become familiar with all details of the work, verify all dimensions in the field, and shall advise the Contracting Officer of any discrepancy before performing the work. No departures shall be made without the prior approval of the Contracting Officer.

1.2.2 System Requirements

The system furnished under this specification shall consist of the standard products of a manufacturer regularly engaged in the production of lightning protection systems and shall be the manufacturer's latest UL approved design. The lightning protection system shall conform to NFPA 70 and NFPA 780, UL 96 and UL 96A, except where requirements in excess thereof are specified herein. The lightning protection system shall be installed by a licensed lightning protection contractor who shall provide a master label at the facility.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Drawings; G|ED

Detail drawings consisting of a complete list of material, including manufacturer's descriptive and technical literature, catalog cuts, drawings, and installation instructions. Detail drawings shall demonstrate that the system has been coordinated and will function as a unit. Drawings shall show proposed layout and mounting and relationship to other parts of the work.

SD-07 Certificates

Materials; G|ED

Where material or equipment is specified to comply with requirements of UL, proof of such compliance. The label of or listing in UL Elec Const Dir will be acceptable evidence. In lieu of the label or listing, a written certificate from an approved nationally recognized testing organization equipped to perform such services, stating that the items have been tested and conform to the requirements and testing methods of Underwriters Laboratories may be submitted. A letter of findings shall be submitted certifying UL inspection of lightning protection systems equipment.

Qualifications; G|ED

Prior to installation of lightning protection system, submit proof of contractor's licensing as a lightning protection contractor.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 General Requirements

No combination of materials shall be used that form an electrolytic couple of such nature that corrosion is accelerated in the presence of moisture unless moisture is permanently excluded from the junction of such metals. Where unusual conditions exist which would cause corrosion of conductors, conductors with protective coatings or oversize conductors shall be used. Where a mechanical hazard is involved, the conductor size shall be increased to compensate for the hazard or the conductors shall be protected by covering them with molding or tubing made of wood or nonmagnetic material. When metallic conduit or tubing is used, the conductor shall be electrically connected at the upper and lower ends.

2.1.2 Main and Secondary Conductors

Conductors shall be in accordance with NFPA 780 and UL 96 for Class I, Class II, or Class II modified materials as applicable.

2.1.2.1 Copper

Copper conductors are shown on the drawings.

2.1.2.2 Aluminum

Aluminum conductor shall not be used.

2.1.3 Air Terminals

Terminals shall be in accordance with UL 96 and NFPA 780. The tip of air terminals shall be a minimum of 2 feet above the ridge parapet, ventilator or perimeter. Air terminals more than 24 inches in length shall be supported by a suitable brace, with guides not less than one-half the height of the terminal.

2.1.4 Ground Rods

Rods made of copper-clad steel shall conform to UL 467. Ground rods shall be not less than 3/4 inch in diameter and 10 feet in length. Ground rods of copper-clad steel, stainless steel, galvanized ferrous, and solid copper shall not be mixed on the job.

2.1.5 Connectors

Clamp-type connectors shall only be used for the connection of the roof conductor to the air terminal and to the guttering. All other connections, bonds, and splices shall be done by exothermic welds or by high compression fittings. The exothermic welds and high compression fittings shall be listed for the purpose. The high compression fittings shall be the type which require a hydraulically operated mechanism to apply a minimum of 10,000 psi.

2.1.6 Lightning Protection Components

Lightning protection components, such as bonding plates, air terminal supports, clips, and fasteners shall conform to UL 96, classes as applicable.

PART 3 EXECUTION

3.1 INTEGRAL SYSTEM

3.1.1 General Requirements

The lightning protection system shall consist of air terminals, roof conductors, down conductors, ground connections, and grounds, electrically interconnected to form the shortest distance to ground. All conductors on the structures shall be exposed except where conductors are in protective sleeves exposed on the outside walls. Secondary conductors shall interconnect with grounded metallic parts within the building. Interconnections made within side-flash distances shall be at or above the level of the grounded metallic parts.

3.1.1.1 Air Terminals

Air terminal design and support shall be in accordance with NFPA 780. Terminals shall be rigidly connected to, and made electrically continuous with, roof conductors by means of pressure connectors or crimped joints of T-shaped malleable metal and connected to the air terminal by a dowel or threaded fitting. Air terminals at the ends of the structure shall be set not more than 2 feet from the ends of the ridge or edges and corners of roofs. Spacing of air terminals 2 feet in height on ridges, parapets, and around the perimeter of buildings with flat roofs shall not exceed 25 feet. In specific instances where it is necessary to exceed this spacing, the specified height of air terminals shall be increased not less than 2 inches for each foot of increase over 25 feet. On large, flat or gently sloping roofs, as defined in NFPA 780, air terminals shall be placed at points of the intersection of imaginary lines dividing the surface into rectangles having sides not exceeding 50 feet in length. Air terminals shall be secured against overturning either by attachment to the object to be protected or by means of a substantial tripod or other braces permanently and rigidly attached to the building or structure. Metal projections and metal parts of buildings, and other metal objects that do not contain hazardous materials and that may be struck but not appreciably damaged by lightning, need not be provided with air terminals. However, these metal objects shall be bonded to the lightning conductor through a metal conductor of the same unit weight per length as the main conductor.

3.1.1.2 Roof Conductors

Roof conductors shall be connected directly to the roof or ridge roll. Sharp bends or turns in conductors shall be avoided. Necessary turns shall have a radius of not less than 8 inches. Conductors shall preserve a downward or horizontal course and shall be rigidly fastened every 3 feet along the roof and down the building to ground. All connections shall be electrically continuous. Roof conductors shall be coursed along the contours of flat roofs, ridges, parapets, and edges; and where necessary, over flat surfaces, in such a way as to join each air terminal to all the rest. Roof conductors surrounding flat surfaces, and flat roofs shall be connected to form a closed loop.

3.1.1.3 Down Conductors

Down conductors shall be electrically continuous from air terminals and roof conductors to grounding electrodes. Down conductors shall be coursed over extreme outer portions of the building, such as corners, with consideration given to the location of ground connections and air terminals. The building shall have down conductors located on each corner of the facillity. Down conductors shall be protected by placing in conduit for a minimum distance of 72 inches above finished grade level.If the conduit is metal, the down conductor shall be bonded at the top and bottom of the conduit.

3.1.1.4 Interconnection of Metallic Parts

Conductors placed where there is probability of unusual wear, mechanical injury, or corrosion shall be of greater electrical capacity than would normally be used, or shall be protected.

3.1.1.5 Ground Connections

Ground connections comprising continuations of down conductors from the

structure to the grounding electrode shall securely connect the down conductor and ground in a manner to ensure electrical continuity between the two. All connections shall be of the clamp type. There shall be a ground connection for each down conductor. Metal water pipes and other large underground metallic objects shall be bonded together with all grounding mediums. Ground connections shall be protected from mechanical injury. In making ground connections, advantage shall be taken of all permanently moist places where practicable, although such places shall be avoided if the area is wet with waste water that contains chemical substances, especially those corrosive to metal.

3.1.1.6 Grounding Electrodes

Each down conductor shall be connected to the ground grid below the structure with approved exothermic welded connections. Approved exothermic welded connections shall be used for all underground conductor splices and all underground connections between conductors and ground rods. Use approved mechanical compression connections for all above grade connections.

3.2 INTERCONNECTION OF METAL BODIES

Metal bodies of conductance shall be protected if not within the zone of protection of an air terminal. Metal bodies of conductance having an area of 400 square inches or greater or a volume of 1000 cubic inches or greater shall be bonded to the lightning protection system using main size conductors and a bonding plate having a surface contact area of not less than 3 square inches. Provisions shall be made to guard against the corrosive effect of bonding dissimilar metals. Metal bodies of inductance shall be bonded at their closest point to the lightning protection system using secondary bonding conductors and fittings. A metal body that exceeds 5 feet in any dimension, that is situated wholly within a building, and that does not at any point come within 6 feet of a lightning conductor or metal connected thereto shall be independently grounded.

3.3 FENCES

Fences shall be grounded, as shown on the drawings. The connection to ground shall be made from the post where it is of metal and is electrically continuous with the fencing.

3.4 INSPECTION

The lightning protection system will be inspected by the Contracting Officer to determine conformance with the requirements of this specification. No part of the system shall be concealed until so authorized by the Contracting Officer.

3.5 WARRANTY

The lightning protection system shall be guaranteed for a minimum period of two years from the date of acceptance. A written warranty shall be provided. The warranty shall guarantee protection against defective material, design, and workmanship. Upon receipt of notice from the Government and/or South Florida Water Management District of failure of the systems covered in this section during the warranty period, repairs shall be made or new replacement parts shall be furnished and installed promptly at no additional cost to the Government.

-- End of Section --